



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE OHIO

AFI21-101_AFMCSUP_AFMCGM1

2 May 2013

MEMORANDUM FOR AFTC, AFLCMC, AFRL, AFNWC, AFSC

FROM: HQ AFMC/A4
4375 Chidlaw Road, Room. C114
Wright-Patterson AFB OH 45433-5006

SUBJECT: Air Force Materiel Command (AFMC) Guidance Memorandum (GM) to AFI 21-101_AFMCSUP1.

RELEASABILITY: There are no releasability restrictions on this publication.

1. This is an AFMC GM immediately changing AFI21-101_AFMCSUP1. Compliance with this publication is mandatory. To the extent its directions are inconsistent with other AFMC publications; the information herein prevails, in accordance with AFI 33-360, *Publications and Forms Management*.
2. This GM incorporates approved changes submitted through AF Form 847 to the AFMC supplement to AFI 21-101. Summary of changes are as follows; updated guidance for applicability and unit alignment/office symbol based on 5-Center construct, Foreign Object (FO) vacuum tool with High-Efficiency Particulate Air (HEPA) rated disposable bags, CAT II minors, Quality Assurance (QA) inspectors (permanent and augmentee) Evaluator Proficiency Evaluation (EPE), depot Technical Order Distribution Office (TODO), and guidance on use of F-35 Sustainment Operating Instructions (SOIs). Additionally, added hanger queen aircraft in assigned purpose codes guidance, Munitions QA guidance and applicability, and Depot Pre-Induction Inspection (PII) and Critical Path verbiage in the Home Station Check (HSC), Phase, or Isochronal Inspection (ISO) flow plan process supporting basic High Velocity Maintenance (HVM) Tenets. This GM applies the replacement of Cryptologic Systems Division (CPSD) policy guidance with AFI 21-101_AFMCSUP1_Addendum_B.
3. In advance of a rewrite of AFI 21-101_AFMCSUP1, the attachment to this memorandum provides guidance changes that are effective immediately.
4. The guidance in this Memorandum is void one-year from the date of this memorandum, or upon incorporation by interim change to, or a rewrite of, AFI21-101_AFMCSUP1.

5. Our POC is Mr. Art Buck, HQ AFMC/A4MM, DSN 674-3014 or via email at arthur.buck@wpafb.af.mil.

T. GLENN DAVIS
Brigadier General, USAF
Director of Logistics and Sustainment

Attachment:
Guidance Changes

Attachment Guidance Changes

(Replace) This supplement prescribes guidance and procedures for all Air Force Materiel Command (AFMC) organizations and personnel that develop, test, and maintain aerospace platforms and associated equipment. This publication does not apply to the Air National Guard Bureau (ANG) and the Air Force Reserve Command (AFRC) and their units. However, if an AFRC unit is assigned or associated with AFMC, where AFMC is the lead, this guidance would be applicable to the AFRC unit. Throughout this supplement, the civilian equivalent (unless no civilian may hold the position) may be applied to any reference to a military rank, grade or position. All references to aircraft and equipment maintenance in AFI 21-101 and this supplement are considered aircraft and equipment (i.e. support equipment, test equipment, special projects equipment, etc.).

Organizations that implement processes that were approved as not applicable or gain those functions will follow the guidance in AFI 21-101 and AFMC Sup or submit a deviation in the form of a waiver request. Example, AFI 21-101 Chapter 11 is not applicable to NSOs, however if they implement processes such as Operating Stock, Shop Stock, and Work Order Residue they will follow the guidance for those programs in Chapter 11 or submit a deviation.

This supplement is further subdivided as follows: **Attachment 13 (Added)** – Combat Wing Organization (CWO), **Attachment 14 (Added)** – Air Force Sustainment Center (AFSC) Air Logistics Complexes (ALC)/Depot, and **Attachment 15 (Added)** – Non Standard Organizations (NSO).

All chapters of AFI 21-101 apply to CWOs which denotes the standard organizational structure.

With numerous assigned missions within AFMC, that are not organized under the standard Combat Wing Organization (CWO) concept IAW AFI 38-101, *Air Force Organization*, the following AFMC Centers/units require deviations (applicability, variance, and/or differences in organizational placement of responsibilities/processes) from AFI 21-101 and this supplement.

AFI 21-102 (18 July 2013) *Depot Maintenance Management*, supersedes the portion of AFI 21-101 that addresses depot maintenance requirements. Until the publication of an AFMC supplement to AFI 21-102, the ALCs must continue to follow AFI 21-101 and AFI 21-101_AFMCSUP1 (Reference memorandum of agreement (09 Nov 12) between HQ AFMC/A4 and AFSC/LG). **DEVIATION (DEV)** – The following chapters in AFI 21-101 do not apply to ALC's; **Chapter 4, Chapter 5, Chapter 6, Chapter 7** (except for AFMC added Chapter 7 in **Attachment 14**), **Chapter 11** (except for AFMC added Chapter 11 in **Attachment 14**), **Chapter 12**, and **Chapter 13**.

Within AFI 21-101_AFMCSUP_1, references to Aeronautical Systems Center (ASC) and Electronic Systems Center (ESC) are now Air Force Life Cycle Management Center (AFLCMC); The Air Force Flight Test Center (AFFTC) and the Air Armament Center (AAC) are now the Air Force Test Center (AFTC); The 46th Test Group is now the 96th Test Group.

The term NSO refers to Air Force Life Cycle Management Center (AFLCMC), 66th Air Base Group, 88th Air Base Wing, Air Force Nuclear Weapons Center (AFNWC), Air Force Test Center (AFTC) Arnold Engineering and Development Complex (AEDC), 96th Test Group, and AFSC 72nd/75th/78th Air Base Wings. **DEV** – The following chapters in AFI 21-101 do not apply to NSO's; **Chapter 4, Chapter 5** (except PMEL/TMDE functions within Chapter 5), **Chapter 6, Chapter 7, Chapter 11, Chapter 13, Chapter 15, Chapter 16 and Chapter 17** (except Chapter 7 and 11 as applicable applies to AFNWC Nuclear Capabilities Directorate's Operating Location Ramstein (OL-RAM), added Chapter 7 in **Attachment 14**).

The following NSOs policy guidance is published in separate Addendums to this supplement: **DEV** – Air Force Research Laboratory (AFRL) applicability to AFI 21-101 and AFI 21-101_AFMCSUP1 is very limited, therefore AFRL logistics maintenance management procedures will be published as a standalone addendum to AFI 21-101_AFMCSUP1 and will only address applicable areas and the level required based on AFRL missions.

DEV – Policy guidance in this supplement for CPSD was superseded by AFI 21-101_AFMCSUP1_Addendum_B.

The 583 MMXS Rivet Minuteman Integrated Life Extension (MILE) operations at Malmstrom AFB MT, Minot AFB ND, and F.E. Warren AFB WY will continue to follow the guidance outlined in the MOA between HQ AFGSC/A4/7 and HQ AFMC/A4, dated 05 May 12 and 583 Missile Maintenance Squadron GM, 583MMXS GM21-101, dated 29 November 2012, until formal policy is incorporated into AFI 21-102_AFMCSUP and implementation guidance is issued by AFSC. Rivet MILE operations at Vandenberg AFB, CA will continue to follow the guidance in attachment 14 ALC/Depot.

Sustainment Operating Instructions (SOIs) are F-35 joint program instructions provided by the Joint Program Office (JPO). They are developed with Service/Partner participation and provide source documentation for Air Force policies/instructions specific to the F-35 where legacy instructions may not be adequate for the given topic. AFMC units may use SOI source documentation/information that is relevant and complements AFI 21-101 and AFMC Sup. SOI requiring a deviation from AFI 21-101 and AFMC Sup requires the unit to submit a waiver. SOIs may be accessed at the following web site:

<https://cs.eis.af.mil/f35/sustainment/Logistics%20Support%20Products%20Library/Forms/AllItems.aspx>

Applicability Matrix.

Type Organization	Center/Unit	AFI21-101 and AFMC Supplement	AFMC Addendums only
CWO (Attachment 13)			
	AFTC	X	
	AFTC/96 TW	X	
	AFTC/412 TW	X	
ALC/Depot (Attachment 14)			

	AFSC	X	
	AFSC/OC-ALC	X	
	AFSC/OO-ALC	X	
	AFSC/WR-ALC	X	
	AFSC/583 MMXS Rivet Minuteman Integrated Life Extension at Malmstrom, Minot, and F.E. Warren AFBs	X	
NSO (Attachment 15)			
	AFLCMC	X	
	AFTC/AEDC	X	
	AFTC/96 TG	X	
	AFNWC	X	
	AFSC/72 ABW	X	
	AFSC/75 ABW	X	
	AFSC/78 ABW	X	
	AFRL		Addendum A
	AFLCMC/HNCBM		Addendum B
	AFLCMC/HNCBS		Addendum B
	AFLCMC/HNCS		Addendum B

Attachment 13

(Add New) 5.10.4. Aircraft Inspection Section. Group/bundle maintenance activities (i.e. specific tasks) into a flow plan depending on work activity durations and dependencies (i.e. **critical path** precedence that establishes predecessor and successor).

(Add New) 7.2.5.3. Upon arrival of the Depot Field Team (DFT), Contract Pre-Induction Inspection (PII) team, or Depot PII team, PS&D will conduct an initial meeting to validate maintenance support requirements are in place. Meetings will be documented on an AF IMT 2410, or locally developed product.

(Add New) 7.2.12. Depot Pre-Induction Inspection (PII). PIIs are designed to determine the aircraft condition lead-time before induction to depot maintenance. Depot teams use the aircraft condition knowledge to establish a supportable Bill of Work (BOW) process for specific repair actions, parts, tools, and equipment; i.e., generating what needs to be done, with what, and ensuring it will be there when planned. PIIs are synchronized with the HSC, Phase, or ISO prior to depot input on MDS directed by program office. PII can be a physical inspection or a pre-induction analysis of records. The determination on who will accomplish the PII (Depot Team, Contract Team, or Field Unit) will be negotiated during the Fleet Scheduling Conferences. At that time the Depot schedules are established with arrival dates of the aircraft at the respective Air Logistic Complexes. As part of the conference the PII will be “scheduled” ~9 months prior to induction to Programmed Depot Maintenance (PDM). The MAJCOM/Unit Representative will declare their intent to accomplish “Organizationally” or request DFT/CFT support for the PII. If none of these options are feasible at a particular time, any aircraft not receiving a PII would still be inducted into PDM.

(Add New) 7.2.12.1. If a depot or contract team is accomplishing the PII, the PS&D Section Chief or designated representative will:

(Add New) 7.2.12.1.2. Be provided a visit agenda by the PII team lead.

(Add New) 7.2.12.1.3. Coordinate with PII team lead to present situational awareness in/out-brief to the MXG as required.

(Add New) 7.2.12.1.4. Coordinate/request tail number data pull queries from applicable MIS.

(Add New) 7.2.12.1.5. Act as liaison and refer PII team to maintenance units for equipment support as required.

(Add New) 7.2.12.1.6. Maintain a file copy of the PII report from PII Team Lead.

(Replace) 8.3.31. (Added) As the selecting/hiring official for QA inspector/QAS, QA Chief will ensure the individual is a qualified subject matter expert (SME) in the functional area (i.e., avionics, AGE, aircraft maintenance, fabrication, munitions, etc) the individual will be evaluating.

(Replace) 8.3.31.1. (Added) QA Chief must ensure civilian QA inspector/QAS civilians have the prior maintenance experience in the functional area for which the position will be filled. The QA must include the following knowledge, skills, and abilities:

(Replace) 8.5.1.1. (Added) QA Inspectors will conduct and document evaluations (PE, EPE), inspections, and process reviews to include as a minimum the requirements in the MSEP.

(Replace) 8.6. Quality Assurance Training. All QAS, inspectors and evaluators (i.e., QA personnel) must be trained to the extent necessary to perform QA functions to include possessing sufficient technical knowledge to effectively perform their duties.

(Replace) 8.6.2.1. DELETE

(Replace) 8.6.11. (Added) Training Documentation. All QA personnel must be trained or possess sufficient technical knowledge to effectively perform their duties. Employee training will be tracked in the Educational and Training Management System (ETMS) or any other HQ AFMC/A4 approved system. QA personnel are required to meet minimum qualifications on certified task being assessed, and must meet any qualification (mandatory formal training) requirements. The Maintenance Quality Manual or QAP will identify specific technical and/or weapons systems training requirements.

(Replace) 8.10.8.9. DELETE

(Replace) 8.10.8.9.9. DELETE

(Replace) Table 8.1. DELETE

(Replace) 8.10.11.2. DELETE

(Add New) 8.26.1. Meet annually (subject to funding) otherwise by teleconference and phone in to participate in the monthly telecon.

(Add New) 14.22.3.2.1.3.1. Aircraft in assigned purpose codes which indicate a status beyond local repair capability (e.g. BJ, BR, BQ, BU, BK, EB, EI etc.) are excluded from hangar queen reporting, but are not excluded from local hangar queen management procedures. NOTE: Some assigned purpose codes per AFI 21-103 require MAJCOM approval prior to use.

(Add New) 14.22.3.2.1.3.2. Aircraft in BJ, BR, BQ, BU, BK, etc., are unit possessed. Possession is not transferred until depot accepts the TO 00-25-107 request or the aircraft is accepted by depot field team/contract field team (CFT) (e.g. speedline, TCTO, etc). Units are exempt from hangar queen reporting for the initial 10 days after regaining possession of the aircraft upon completion of depot field team/CFT work, or depot authorized local repairs. Aircraft are removed from hangar queen status when they become airborne on any type of flight.

(Add New) 14.22.3.2.1.3.3. Aircraft permanently assigned and possessed in trainer inactive code (TX) (Aircraft with a G prefix) are exempt from hangar queen reporting.

(Add New) 14.22.3.2.1.3.4. Aircraft in temporary modification (T-2) (Assigned purpose code BK) are exempt from hangar queen status, but strict parts and cannibalization management must be maintained.

Attachment 14

(Replace) 3.1.3.1. DELETE

(Replace) 3.1.3.2. DELETE

(Replace) 3.2.16. Ensure annual inventory of all AGE maintained in the MXW is submitted to AFMC/A4MM AGE Functional manager by the 15th of April each year.

(Add New) 3.3. Wing Vice Commander (WG/CV) Responsibilities. Under the AFMC 5-Center Construct, the responsibility will be assumed by the Air Base Wing Vice Commander.

(Replace) 8.5.1.1. (Added) QA Inspectors will conduct and document evaluations (PE, EPE), inspections, and process reviews to include as a minimum the requirements in the MSEP.

(Replace) 8.6. Quality Assurance Training. All QAS, inspectors and evaluators (i.e., QA personnel) must be trained to the extent necessary to perform QA functions to include possessing sufficient technical knowledge to effectively perform their duties.

(Replace) 8.6.2. 1. DELETE

(Replace) 8.10.8.9. AFMC Conventional Munitions Program. Munitions activities will follow Group/Squadron QA program (if established). Units with small and unique missions, where a full QA Program is not practical, will follow QA requirements depicted in **Table 8.1**.

(Replace) 8.10.8.9.9. DELETE

(Replace) 8.10.8.9.10. DELETE

(Replace) 8.10.11.2. DELETE

(Replace) 8.14. Technical Order Distribution Office (TODO). The TODO function may be contracted at the ALCs.

(Replace) 8.25.2. A qualified QAS or evaluator shall conduct an EPE biennially on each inspector while they are performing one evaluation and/or one inspection.

(Replace) 8.30.2. (Added) Follow-up Assessments. Depending on the severity of the discrepancies the QAS, QA supervisor, or management may direct specific follow-up actions. Results of follow-up assessments will be recorded in QIMSS. Follow-up assessment procedures will be documented in the Maintenance Wing Quality Manual or delegated to Group QAP.

(Replace) Table 8.1.

	309 SPTS/MXDVAD (Davis-Monthan AFB)
AFMC Conventional Munitions QA Program Applicablility Matrix	
Maintenance Quality General Section	
1. QA Responsibilities (CC may differ from MXW; LRS, OSS, etc.)	X
2. Quality Assurance Inspector Responsibilities	X
3. Quality Assurance Training	X
4. Maintenance Standardization and Evaluation Program (MSEP)	X
5. Establish/re-validate Acceptable Quality Levels (AQL/Standards)	X
6. QA Data Based (approved by MAJCOM A4US)	X
7. Monthly MSEP Summary	X
8. Quarterly MSEP Meeting	X
9. One Time Inspections (OTI)	X
Munitions Quality Specific Areas	
10. Accountability	*
11. Storage practices, security, and safety	X
12. Inspection	*
13. Materiel handling and test equipment	X
14. Stockpile management	*
15. Training programs	X
16. Infrastructure (LPS, grounds, and bonds)	*
17. TAS, CTKs, tools, and support equipment	X
18. Munitions assembly	
19. Tactical Munitions Reporting System (TMRS)	

NOTE: *Denotes QA oversight will be met through Unit Self Insp, Safety & directed AFI reviews (Documents will be posted to HQ AFMC QA Share Point at least Semi-annually)

(Replace) 10.4.2.2.1.2.8. Ensure tool kit is free of Foreign Objects. Exception: FOD vacuum tool with HEPA rated disposable bags are not required to be emptied until the disposable bag is full or rendered unserviceable due to a tear or puncture. This exemption does not apply to FOD vacuum tools with standard reusable bags designed to be emptied through a Velcro or zippered pouch.

(Replace) 19.2.8. (Added) Pre-Production Planning, New Workload. For each new programmed/negotiated workload, the MXW/CC requires establishment of PPPT composed of Planning Element Chief or designee, Wing Business Office, Cognizant Engineer (OSS&E authority), applicable MXW Engineering, RCC Production Supervisor(s) or designee(s), QA Specialist (QAS) and other representatives (i.e. DLA, material support specialist, safety, bioenvironmental, Nuclear Weapons Resource Officer (NWRO), scheduling, training, PAC manager, etc.) as required. See Logistics Requirement Determination Process (LRDP) website. www.gao.gov/archive/1996/ns96070.

(Replace) 19.2.16.7.2. (Added) A QAS can add a Q code above block 29 of the AFMC Form 173 or in the “Other/Insp” (third column) of the definitized list. On the AFMC Form 959 the QAS can add a Q in block 20, third column identified with a “Q” and on an ITS equivalent WCD, the QAS will add a Q to the right of the current certification code block. All Q entries will be done in Red. The QAS will affix a stamp and date next to the manually entered Q code on the applicable WCD. Only QAS is authorized to downgrade a Q code.

(Replace) 19.3.7. (Added) QAS will:

(Replace) 19.5.1.3.6. (Added) (Q) Quality Stamp. Issued to the QAS to ensure certification and verification of inspection, when required, on WCDs are complete. Other uses may be included in local publications. Stamps are required for WCD related responsibilities.

(Add New) 20.3.1. Sustainment Operating Instructions (SOIs) are F-35 joint program instructions provided by the Joint Program Office (JPO). They are developed with Service/Partner participation and provide source documentation for Air Force policies/instructions specific to the F-35 where legacy instructions may not be adequate for the given topic. SOI source documentation/information that is relevant complements AFI 21-101_AFMCSUP1 Attachment 14, *Aircraft and Equipment Maintenance Management*. It prescribes policies and procedures governing aerospace equipment maintenance management of F-35 aircraft for AFMC F-35 Depot Operations. SOIs may be accessed at the following web site: <https://cs.eis.af.mil/f35/sustainment/Logistics%20Support%20Products%20Library/Forms/AllItems.aspx>

(Add New) 20.3.1.1. SOI requiring a deviation from AFI 21-101_AFMCSUP1 requires the unit to submit a waiver request IAW Attachment 14 para 1.8.

Figure A14.4.1. Instructions for AFMC Form 959 (Electronic or Hand Scribed)

(Replace) 20.	Q	Quality Inspection code Q. The QAS stamps and dates at the completion of the required inspection/verification.
----------------------	----------	--

Attachment 15

(Replace) A15.1. (Added) Table A15.1. (Added) prescribes NSO guidance and procedures. The chapters and paragraph numbers in **Table A15.1.** coincide with or add supplemental guidance and must be used in conjunction with AFI 21-101. Throughout the table the civilian equivalent (unless no civilian may hold the position) may be applied to any reference to a military rank, grade or position. The term NSO refers to Air Force Life Cycle Management Center (AFLCMC), 66th Air Base Group, 88th Air Base Wing, Air Force Nuclear Weapons Center (AFNWC), Air Force Test Center (AFTC), Arnold Engineering and Development Complex (AEDC), 96th Test Group, and AFSC 72nd/75th/78th Air Base Wings. **DEV** – The following chapters in AFI 21-101 do not apply to NSO's; **Chapter 4, Chapter 5** (except PMEL/TMDE functions within Chapter 5), **Chapter 6, Chapter 7, Chapter 11, Chapter 13, Chapter 15, Chapter 16 and Chapter 17** (except Chapter 7 and 11 as applicable applies to AFNWC Nuclear Capabilities Directorate's Operating Location Ramstein (OL-RAM), added Chapter 7 in **Attachment 14**).

(Add New) 3.9.44. Ensure annual inventory of all AGE maintained in the MXW is submitted to AFMC/A4MM AGE Functional manager by the 15th of April each year.

(Replace) 8.1. General. For the purpose of this chapter the NSOs are: AFLCMC, AFNWC and any additional units identified in **Table 8.1.** Where applicable, AEDC shall follow **Chapter 18, Contract Surveillance.**

(Replace) 8.3.31. (Added) As the selecting/hiring official for QA inspector/QAS, QA Chief will ensure the individual is a qualified subject matter expert (SME) in the functional area (i.e., avionics, AGE, aircraft maintenance, fabrication, munitions, etc) the individual will be evaluating.

(Replace) 8.3.31.1. (Added) QA Chief must ensure civilian QA inspector/QAS civilians have the prior maintenance experience in the functional area for which the position will be filled. The QA must include the following knowledge, skills, and abilities:

(Replace) 8.5.1.1. (Added) QA Inspectors will conduct and document evaluations (PE, EPE), inspections, and process reviews to include as a minimum the requirements in the MSEF.

(Replace) 8.6. Quality Assurance Training. All QAS, inspectors and evaluators (i.e., QA personnel) must be trained to the extent necessary to perform QA functions to include possessing sufficient technical knowledge to effectively perform their duties.

(Replace) 8.6.2. 1. DELETE

(Replace) 8.10.8.9. AFMC Conventional Munitions Program: Munitions activities will follow Group/Squadron QA program (if established). Munitions activities will follow Group/Squadron QA program (if established). Units with small and unique missions, where a full QA Program is not practical, will follow QA requirements depicted in **Table 8.1.**

(Replace) 8.10.8.9.9. DELETE

(Replace) 8.10.8.9.10. DELETE

(Replace) Table 8.1.

	78 LRS/LGRW (Robins AFB)	649 MUNS (Hill AFB)	96 TG (Holloman AFB)	377 MXS (Kirtland AFB)	88 OSS/OSG (WPAFB)	72 LRS/LGLOC (Tinker AFB)	66 LRS/LGLC (Hanscom AFB)	AEDC/TSF-LG (Arnold AFB)
AFMC Conventional Munitions QA Program Applicability Matrix								
Maintenance Quality General Section								
1. QA Responsibilities (CC may differ from MXW; LRS, OSS, etc.)	X	X	X	X				
2. Quality Assurance Inspector Responsibilities	X	X	X	X				
3. Quality Assurance Training	X	X	X	X				
4. Maintenance Standardization and Evaluation Program (MSEP)	X	X	X	X				
5. Establish/re-validate Acceptable Quality Levels (AQL/Standards)	X	X	X	X				
6. QA Data Based (approved by MAJCOM A4US)	X	X	X	X				
7. Monthly MSEP Summary	X	X	X	X				
8. Quarterly MSEP Meeting	X	X	X	X				
9. One Time Inspections (OTI)	X	X	X	X				
Munitions Quality Specific Areas								
10. Accountability	X	X	**	X	*	*	*	*
11. Storage practices, security, and safety	X	X	X	X	*	*	*	*
12. Inspection	X	X	**	X	*	*	*	*
13. Materiel handling and test equipment	X	X	**	X	*	*	*	*
14. Stockpile management	X	X	**	X	*	*	*	*
15. Training programs	X	X	X	X	*	*	*	*
16. Infrastructure (LPS, grounds, and bonds)	X	X	X	X	*	*	*	*
17. TAS, CTKs, tools, and support equipment	X	X	X	X	*	*	*	*
18. Munitions assembly	X	X	**	X	*	*	*	*
19. Tactical Munitions Reporting System (TMRS)	X	X						

NOTE: *Denotes QA oversight will be met through Unit Self Insp, Safety & directed AFI reviews (Documents will be posted to HQ AFMC QA Share Point at least Semi-annually)

NOTE: ** Denotes item is limited scope due to unique mission/equipment and Host Base munitions support. Will be defined in local Operating Instruction and/or Technical Data Packages.

(Replace) 8.10.11.2. DELETE

(Add New) 8.26.1. Meet annually (subject to funding) otherwise by teleconference and phone in to participate in the monthly telecon.

Section 8C (Added) Table 8.1. NSO Applicability Matrix

Chapter 8, NSO Applicability Matrix

	AFNWC	AEDC	96th TG
Section	Chapter 18 Applies	Chapter 18 applies	
8.2 QA Responsibilities	YES	NO	YES*
8.3. QA OIC/Superintendent (QA OIC/SUPT) Responsibilities	YES	NO	YES*
8.4. Quality Assurance Chief Inspector Responsibilities	YES	NO	YES*
8.5. Quality Assurance Inspector Responsibilities	YES	NO	YES*
8.6. Quality Assurance Training	YES	NO	YES
8.7. Quality Assurance Augmentation	YES	NO	YES*
8.8. Rotation of Quality Assurance Personnel	YES	NO	NO
8.9. Activity Inspection Program	YES	NO	YES*
8.10. Maintenance Standardization and Evaluation Program (MSEP)	YES	NO	YES*
8.10.18. Establishing Acceptable Quality Levels (AQL/Standards)	YES	NO	YES
8.10.19. Monthly Summary (Quarterly for ANG & CPD)	YES	NO	YES
8.10.20. MSEP Meeting	YES	NO	YES
8.11. MAJCOM-approved QA database	YES	NO	YES
8.12. QA Product Improvement Programs	YES	NO	YES*
8.13. Configuration Management (CM) and Modification	YES	NO	YES*
8.14. Technical Order Distribution Office (TODO)	YES	NO	YES*
8.15. One-Time Inspections (OTI)	YES	NO	YES*
8.16. Functional Check Flights (FCFs)	NO	NO	YES*
8.17. Inflight Operational Checks	NO	NO	NO
8.18. High Speed Taxi Checks	NO	NO	NO
8.19. Weight and Balance (W&B) Program	NO	NO	NO
8.20. Chafing Program	NO	NO	NO

8.21. Quality Assurance Evaluator (QAE)/Quality Assurance Representative (QAR)	YES	YES	YES*
--	-----	-----	------

Items designated with "NO" are not applicable.

Items designated with "YES" indicate a mandatory MAJCOM requirement.

Items designated with "YES *" indicate that applicability to all sub paragraphs will be addressed in individual operating instructions and coordinated through HQ AFMC/AUS to ensure applicability and intent has been addressed.

DEV Table 14.3. (Added-AFMC) NSO Applicability Matrix.

Non-Standard Organization	AFLC MC	AFN WC
Section		
14.1. Aircraft Battle Damage Repair (ABDR)	N	N
14.2. Aircraft and Equipment Decontamination	N	N
14.3. Aircraft Grounding (Material Defect)	Y	N
14.4. Aircraft Inlet/Exhaust Certification	Y	N
14.5. Aircraft Rapid/Hot Defueling	N	N
14.6. Aircraft Structural Integrity (ASIP)	Y	N
14.7. Hydraulic Fluid Purification (HFP)	Y	N
14.8. Cannibalization Program	Y	N
14.9. Combat Sortie Generation	N	N
14.10. Crashed, Damaged, or Disabled Aircraft Repair	Y	Y
14.11. Dropped Object Prevention	Y	Y
14.12. F100 Eddy Current Inspection	Y	N
14.13. End-of-Runway (EOR) Inspection	Y	N
14.14. Engine Blade Blending Training and Cert Prgm	Y	N
14.15. Engine Run Training and Certification Program	Y	N
14.16. Flash Blindness Protective Device	Y	N
14.17. Engine Flex Borescope Inspection Training/Cert	Y	N
14.18. Flying Crew Crew Chiefs (FCC)	N	N
14.19. Foreign Object Damaged (FOD) Prevention	Y	Y
14.20. Forms Documentation	Y	Y
14.21. Ground Instructional Trainer Aircraft (GITA)	Y	N
14.22. Hangar Queen Aircraft	Y	N
14.23. Hot Refueling Procedures	Y	N
14.24. Land Mobile Radio (LMR) Management	Y	N
14.25. Lead Technician	Y	N
14.26. MRT Procedures	Y	N
14.27. Protective Aircraft Shelter (PAS) Environment	N	N
14.28. Radar Warning Receiver/Radar Threat Warning Test	Y	N
14.29. Ramp Inspection Program	Y	N
14.30. Red Ball Maintenance	Y	N

14.31. (SEM/EDX) Master Chip Detector Analysis Program	N	N
14.32. Self-Inspection Program	Y	Y
14.33. Senior Leader Maintenance Course	Y	Y
14.34. Special Certification Roster (SCR)	Y	Y
14.35. WRM External Nestable Fuel Tank Build-Up (NFTBU)	Y	N
14.36. 406 MHZ Emergency Locator Transmitter System	Y	N
14.37. IFF Mode IV Program	Y	N

Items designated with “Yes” are applicable only in those units that perform that function.
If a unit gains a function that involves the above listed items, they will be required to follow the applicable guidance within Chapter 14.
* 14.1.1.3
** Will develop local guidance that meets the intent of applicable paragraph.

Abbreviations and Acronyms

PII – Pre-Induction Inspection

Terms

Critical Path: Schedule network analysis technique that is performed using the schedule model. The critical path method calculates the theoretical early start and finish dates, and late start and finish dates, for all schedule activities without regard for any resource limitations by performing a forward pass analysis and backward pass analysis through the project schedule network paths.

BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND

AIR FORCE INSTRUCTION 21-101

26 JULY 2010

Incorporating Change 1, 16 August 2011

AIR FORCE MATERIEL COMMAND
Supplement 1

26 APRIL 2012

Maintenance

**AIRCRAFT AND EQUIPMENT
MAINTENANCE MANAGEMENT**



COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-publishing.af.mil for downloading or ordering.

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: AFMC/A4MM

Certified by: AFMC/A4M
(Col Rosemary L. Thorne)

Supersedes: AFI21-101_AFMCSUP, 14 December 2007

Pages: 370

AFI 21-101, 26 July 2010, incorporating Change 1, 16 August 2011 is supplemented as follows: This supplement prescribes guidance and procedures for all Air Force Materiel Command organizations and personnel that develop, test, and maintain aerospace platforms and associated equipment. This publication does not apply to the Air National Guard Bureau (ANG) and the Air Force Reserve Command (AFRC) and their units. However, If an AFRC unit is assigned or associated with AFMC where AFMC is the lead this guidance would be applicable to the AFRC unit.

Throughout this supplement, the civilian equivalent (unless no civilian may hold the position) may be applied to any reference to a military rank, grade or position. With numerous assigned missions within AFMC, that are not organized under the standard Combat Wing Organization (CWO) concept IAW AFI 38-101, *Air Force Organization*, the following AFMC Centers/units require deviations (applicability, variance, and/or differences in organizational placement of responsibilities/processes) from AFI 21-101 and this supplement. This supplement is further subdivided as follows: **Attachment 13 (Added)** – Combat Wing Organization (CWO), **Attachment 14 (Added)** – Air Logistics Centers (ALC)/Depot, and **Attachment 15 (Added)** – Non Standard Organizations (NSO). All chapters of AFI 21-101 apply to CWOs which denotes the standard organizational structure. **DEVIATION (DEV)** – The following chapters in AFI 21-

101 do not apply to ALC's; **Chapter 4, Chapter 5, Chapter 6, Chapter 7** (except for AFMC added Chapter 7 in **Attachment 14**), **Chapter 11** (except for AFMC added Chapter 11 in Attachment 14), **Chapter 12, Chapter 13 and Chapter 16**. **DEV** – The following chapters in AFI 21-101 do not apply to NSO's; **Chapter 4, Chapter 5, Chapter 6, Chapter 7, Chapter 11, Chapter 13, Chapter 15, Chapter 16 and Chapter 17**. The term NSO refers to Arnold Engineering and Development Center (AEDC), Electronic Systems Center (ESC) Cryptologic Systems Division (CPSD) Technical Applications Products Section (ESC/HNCBM) and Consolidated Signals Intelligence Support Activity Logistics Section (ESC/HNCBS), Air Force Nuclear Weapons Center (AFNWC), Aeronautical Systems Center (ASC), and 46 Test Group (CPSD is exempt from **Chapter 12 and Chapter 18**). **DEV** - Air Force Research Laboratory (AFRL) applicability to AFI 21-101 and the AFMC Sup is very limited, therefore AFRL logistics maintenance management procedures will be published as a standalone addendum to the AFI 21-101 AFMC Sup and will only address applicable areas and the level required based on AFRL missions. **DEV** – 581/MMXS Rivet Minuteman Integrated Life Extension (MILE) operations at Malmstrom AFB, MT; Minot AFB, ND; and F.E. Warren AFB, WY, applicability to AFI 21-101 and the AFMC Sup is very limited; therefore, Rivet MILE logistics maintenance procedures will be published as a standalone addendum to the AFI 21-101 AFMC Sup and will only address applicable areas and the level required based on Rivet MILE missions. All references to aircraft and equipment maintenance in AFI 21-101 and this supplement are considered aircraft and equipment (i.e. support equipment, test equipment, special projects equipment, etc.).

This supplement provides command guidance as directed by AFI 21-101, *Aerospace Equipment Maintenance Management*. Units will publish local directives mandated by AFI 21-101 and this supplement. Waiver authority for this supplement is HQ AFMC/A4. Units developing separate publications based on requirements set forth in this supplement will follow guidance in AFI 33-360, *Publications and Forms Management*. Units supplementing this document will not be integrated into the AFI or the AFMCSUP; supplements must be "camera ready."

Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records* and disposed of in accordance with the Air Force Records Disposition Schedule located at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>.

Send comments, questions, and recommendations to this publication on AF Form 847, *Recommendation for Change of Publication*, to afmc.a4m.workflow@wpafb.af.mil (AFMC/A4M Workflow) or HQ AFMC/A4M, 4375 Chidlaw Rd, Bldg 262 C114 WPAFB OH 45433-5006.

SUMMARY OF CHANGES

This publication has been substantially revised and must be reviewed in its entirety. This revision clarifies significant changes made in the 26 July 2010 edition of AFI 21-101, incorporating Change 1 dated 16 August 2011. Unique depot procedures and NSO section/chapter applicability were pulled out of AFI 21-101. Therefore, AFMC Supplement will not be integrated with parent AFI 21-101 to accommodate the 3 standalone attachments for each of AFMCs organizational structures within AFI 21-101. **Attachment 13 (Added)** – Combat Wing Organization (CWO) adds guidance for Test Wing/Centers. **Attachment 14 (Added)** – Air Logistics Centers (ALC) /Depot completely rewritten to clarify policy and procedures for ALC's

depot operations. **Attachment 15 (Added)** – Non Standard Organizations was revised to define and add additional guideline for chapters in AFI 21-101 that apply to non-traditional organizations within AFMC. AFMC/A4's policy memorandum, GM, and waivers to AFI 21-101 were incorporated into this document. This supplement also incorporates numerous AFMC command publications to streamline policy processes. Chapters have been consolidated and renumbered to align with changes implemented in the parent instruction.

NOTE: Deviations are identified throughout this supplement per instruction in AFI 21-101 and were approved by AF/A4L. Some chapters and paragraphs in this supplement are designated with applicability statement.

KATHLEEN D. CLOSE
Major General, USAF
Director of Logistics and Sustainment

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFMAN 48-155, *Occupational and Environmental Health Exposure Controls*, 1 Oct 2008
AFOSHSTD 48-20, *Occupational Noise and Hearing Conservation Program*, 30 Jun 2006
AFI 11-208IP, *Department of Defense Notice To Airmen (NOTAM) System*, 3 Jun 2011
AFI 11-212, *Munitions Requirements For Aircrew Training*, 8 Apr 2009
AFI 21-104, *Selective Management of Selected Gas Turbine Engines*, 11 Dec 2007
AFI 21-132, *Air Force Engines Trending and Diagnostics Program*, 9 Nov 2000
AFI 23-302, *Vehicle Management*, 29 Oct 2007
AFI 24-203, *Preparation and Movement of Air Force Cargo*, 2 Nov 2010
AFI 31-101, *Integrated Defense (FOUO)*, 8 Oct 2009
AFI 33-364, *Records Disposition – Procedures and Responsibilities*, 22 Dec 2006
AFI 36-2248, *Operation and Management of Aircrew Training Devices*, 1 May 1998
AFI 38-201, *Determining Manpower Requirements*, 26 Sep 2011
AFI 48-145, *Occupational Health Program*, 15 Sep 2011
AFI 63-101, *Acquisition and Sustainment Life Cycle Management*, 8 Apr 2009
AFI 99-103, *Capabilities-Based Test and Evaluation*, 26 Feb 2008
AFMAN 24-206, (I), *Packaging of Material*, 12 Jan 2004
AFMAN 33-363, *Management of Records*, 1 Mar 2008
AFMCI 21-126, *Temporary 2 (T2) Modification of Aerospace Vehicles*, 19 Jul 2005
AFMCI 21-130, *Depot Maintenance Material Control*, 1 May 1998
AFMCI 21-165, *Aircraft Flying and Maintenance Scheduling Procedures*, 12 Oct 2005
TO 00-25-257, *Users Manual -Engine Trending and Diagnostics USAF Engines (All USAF Engines)*, 20 Oct 2004
TO 33K-1-100, *Technical Manual TMDE Calibration Interval Technical Order and Work Unit Code Reference Guide*, 30 Apr 2003
Public Law 99-661, *1987 Defense Authorization Act*, 30 Apr 2008
DoD 5100.76-M, *Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives*, 12 Aug 2002
DOD 5500.7-R, *Joint Ethics Regulation (JER)*, 1 Aug 1993

Prescribed Forms

AFMC Form 61, *Missing/Removed Tools and Equipment*, 19 Jan 2006
AFMC Form 62, *CTK Inventory and Control Log*, 8 Nov 2005
AFMC Form 74, *Nondestructive Inspection Personnel Qualification and Certification Record*, 1 Jul 1992
AFMC Form 77, *Request for Quality Assistance*, 1 Jul 1992
AFMC Form 78, *Deficiency Report*, 1 Jul 1992
AFMC Form 127, *Routed Order*, 1 Feb 2004
AFMC Form 137, *Routed Order (Proj Dir)*, 28 Sep 2001
AFMC Form 173, *MDS/Project Operation Assignment*, 1 Jul 1992

AFMC Form 202, *Nonconforming Technical Assistance Request and Reply*, 22 Mar 2006
AFMC Form 206, *Temporary Work Request*, 20 Oct 2006
AFMC Form 309, *Tool Control Inventory Record*, 1 Jul 1997
AFMC Form 310, *Lost/Found Item Report*, 12 Apr 2011
AFMC Form 311, *Certificate Of Responsibility for Government Property*, 20 Jul 2006
AFMC Form 343, *Quality Assurance Assessment*, 28 Jun 2007
AFMC Form 500, *Work Control Document Production Planning Team Checklist*, 14 May 2009
AFMC Form 501, *Request for Quote/Rough Order of Magnitude*, 2 Apr 2009
AFMC Form 502, *Post Dock Review Checklist*, 22 Jul 2008
AFMC Form 561, *Process Orders*, 2 May 2005
AFMC Form 957, *Work Control Document (WCD) Change Request*, 2 Nov 2006
AFMC Form 959, *Work Control Document*, 1 Jul 1992

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*, 22 Sep 2009
AF Form 3952, *Chemical Hazardous Material Request/Authorization*, 1 Mar 2005
AFTO Form 252, *T.O. Publication Change Request*, 9 Nov 2011
DD Form 2026, *Oil Analysis Request*, Mar 1999
DD Form 2027, *Oil Analysis Record*, Aug 1976
DLA Form 1838, *Organic Manufacturing Quote*, Oct 2001

Abbreviations and Acronyms

A4RB – Air Force Logistics Requirements Board
AA – Air Abort
AAI—Air-to-Air Interrogation
ABOM – Automated Bill of Materials
AD—Airworthiness Directive
A&P—Airframe and Powerplant
ACO—Administrative Contracting Officer
AEI—Aerospace Engineering Instructions
AFCAIG – Air Force Cost Analysis Improvement Group
AFKS – Air Force Knowledge Services
AIS—Avionics Intermediate Section
AL—Agile Logistics
AMOC—Aircraft Maintenance Officers Course
AMR – Aircraft and Missile Requirements
AOL—All Operator Letter
APP – Authorized for Procurement Purposes
AR – Abort Rate
ARMS—Aviation Resource Management System
ASL – Adjusted Stock Level
ATS—Avionics Test Stations
BOM – Bill of Material
BOW – Bill of Work

BR – Break Rate
CAM – Centralized Asset Management
CAP2 – Capability and Capacity
CAVAF – Commercial Asset Visibility Air Force
CB—Customer Bulletin
CC—Commander
CD – Civilian Director
CEM – Command Engine Manager
CFHS – Carried Forward to Home Station
CFT—Combined Flight Test
CDDS—CITS Deployable Diagnostic System
CL—Civilian Leader
CLSSA – Cooperative Logistics Supply Support Agreement
CMC—CITS Maintenance Code
CMR—CITS Maintenance Recording Cartridges
CoP – Community of Practice
CPI – Continuous Process Improvement
CR – Cannibalization Rate
CRI – Consolidated Repairable Inventory
CRI OH – Consolidated Repairable Inventory On-Hand
CSAG-MD – Consolidated Sustainment Activity Group – Maintenance
CSAG-S – Consolidated Sustainment Activity Group – Supply
CSE – Center Scheduling Enterprise
CSI – Consolidated Serviceable Inventory
CSI OH – Consolidated Serviceable Inventory On-Hand
CSR – Communications and Information Systems Requirements Document
DBL – Database Look
DDR – Daily Demand Rate / Delayed (or Deferred) Discrepancy Rate
DIOH – Due In From Overhaul
DM – Depot Maintenance
DMISA – Depot Maintenance Inter-Service Agreement
DMT – Depot Maintenance Transformation
DOTM – Due Out To Maintenance
DREAMS—Deficiency Report Entry and Mail Submitter (System)
DRR – Departure Reliability Rate
DSCM – Depot Supply Chain Management
DSCR – DLA Aviation
DTUC—Data Transfer Unit Cartridge
EET—Exercise Evaluation Team
EFT—External Fuel Tank
EIMSURS – Equipment Inventory, Multiple Status and Utilization Reporting Subsystem
ELG – Enterprise Logistics Governance
EMSS – EXPRESS MAJCOM Scenario Subsystem
ENGR – Engineer
EPS – Exchangeable Production System
ERM – Enterprise Repair Manager

ERRP – Engineering Requirements Review Process
ES – Equipment Specialist
ESS – Edwards Scheduling System
ETMS – Education Training Management System
FIABS – Financial Inventory and Accounting Billing System
FC—Functional Commander
FCRN – Fund Classification Reference Number
FD—Functional Director
FED—Forced Equipment Document
FR – Fix Rate
FYDP – Future Years Defense Program
GA – Ground Abort
GSD – General Support Division
HPO—High Performing Organization
HSLDR – Home Station Logistics Departure Reliability
HQ – Headquarters / Hangar Queen
I&S – Interchangeable and Substitution
IA—Inspection Authorization
ICS – Interim Contract Support
INS/NSO – Insurance/Numerical Stockage Objective
IPV – Industrial Product-Support Vendor
IQU – Integrated Query Utility
IRRB – Integrated Requirements Review Board
ISMT – Information System Management Tool
ITS – Inventory Tracking System
JON – Job Order Number
LOM – List of Material
LRDP – Logistics Requirements Determination Process
LSET—Logistics Standardization and Evaluation Team
LSEP—Logistics Standardization and Evaluation Program
LT&E—Logistics Test & Evaluation
MASS—Mission Capable (MICAP) Asset Sourcing System
MEGP—Mission Essential Ground Personnel
MEI—Major End Item
MISTR – Management of Items Subject to Repair
MGN – Mission Generation Network
MMA—Maintenance Management Analysis
MOD—Modification
MOU—Memorandums of Understanding
MPS – Material Processing System
MRT – Maintenance Review Team
MSE – Munitions Support Equipment / Maintenance Scheduling Effectiveness
MSIP—Multi Stage Improvement Program
MSOR – Multiple Source of Repair
MWR – Maintenance Work Request
MXSG – Maintenance Support Group

MXW – Maintenance Wing
NIMMS – NAVAIR Industrial Material Management System
NMCB – Not Mission Capable Both
NOCM – Nuclear Ordnance Commodity Management
NSL – Non-Stock Listed
NTI – Non-Test Induced
O&A – Over and Above
OM—Organizational Maintenance
OMEI – Other Major End Item
OWO – On Work Order
P&A – Procedures and Analysis
PA – Personnel Availability
PAC – Production Acceptance Certification
PAL—Permissive Action Link
PAO – Project Administration Officer or Project Administration Office
PCO—Procurement Contracting Officer
PD – Project Directives
PDMC – Planning for DLA Managed Consumables
PDMSS – Programmed Depot Maintenance Scheduling System
PDRC – Post Dock Review Checklist
PDRR – Post Dock Records Review
PDRT – Post Dock Review Team
PF – Phase Flow
PFT – Product Focus Team
PGM—Precision Guided Munitions
PH – Phase Inspection
PIM – Prime Item Manager
PM – Program Manager
PM—Preventive Maintenance
PMO – Program Management Office
PO – Project Order
POS – Peacetime Operating Stock
POU – Point of Use
PPS – Pre-Production Section
PPT – Production Planning Team
PRA—Planning Requirements
PRM – Product Repair Manager
PRS – Performance Requirements Statement / Propulsion Requirements System
PSC – Product Support Center **PSF** – Production Support Flight **PSS** – Production Support Section
PSSD – Production Section Scheduling Designator
PST – Production Support Technician
PTO—Preliminary Technical Order
Q/MDR – Quality & Material Deficiency Report
QASP—Quality Assurance Evaluation Program
QAPC—Quality Assurance Program Coordinator

QDR – Quality Deficiency Report
QLP – Query Language Processor
RBL – Readiness Based Leveling
RCC – Resource Control Center
RCP – Repair Cycle Processing
RDD – Required Delivery Date
RDO – Redistribution Order
RFQ – Request for Quote
RM/CM – Requirements Management/Configuration Management
RN – Repair Network
RNI – Repair Network Integration
RNM – Repair Network Manager
ROD – Report of Discrepancy
ROM – Rough Order of Magnitude
R/R – Repeat/Recur
RTL—Routine Task List
SAI – Serviceable As Is
SB—Service Bulletin
SBSS—Standard Base Supply System
SCM – Supply Chain Manager
SCU—Software Capability Upgrade
SDS—Service Delivery Summary
SEM – Scheduling Effectiveness for Maintenance
SEM/EDX—Scanning Electron Microscope/Energy Dispersive X-ray
SGM – Sub Group Master
SHD – Significant History Data
SMART – Supply Management Analysis Reporting Tool
SMXG – Software Maintenance Group
SNB – Serial Number Bin
SOR – Source of Repair
SOS – Source of Supply
SP—Service Provider
SPAWS – Single Prioritization Across Weapon Systems
SPL—Service Provider Lead
SQL – Structured Query Language
SRT—Sample Response Time
SRU – Shop Replaceable Unit
SSC – Shop Service Center
STC—Supplemental Type Certificate
SWIM—Special Weapons Information Management
SYNC REP – Schedule Execution Representative
TAO—Technical Assistance Organization
TD—Technical Data and/or Test Directive
TDI – Tamper Detection Indicators / Time Distribution Interval
TNMCM – Total Not Mission Capable for Maintenance
TNMCS – Total Not Mission Capable for Supply

TS—Test Squadron
TSE – Test Schedule Effectiveness
TSEM – Total Scheduling Effectiveness for Maintenance
UDLM – Unprogrammed Depot Level Maintenance
UT – Upgrade Training
WA – Work Authority
WBS – Work Breakdown Structure
WLCMP—Weapons Load Crew Management Program
WORK SPEC – Work Specification Document
WTR—Workable TCTO Report
WW – WorldWide

Terms

Acceptable Quality Level (AQL)/Standards—A standard is the acceptable quality level (number of minor defects) that can be considered satisfactory as a process average or conforming to established criteria.

Assessment—The evaluation of a system, component, process, procedure or person.

Auditable – A process through which an auditor can examine records to verify their accuracy and or correctness.

Core Inspection—Assessments of common depot production maintenance programs and processes that require continuous evaluation using directed checklists and the mandatory questions as a minimum.

Corrective Action—The action to eliminate the cause of a detected defect or other undesirable condition.

Definitized List – A list that provides a detailed step-by-step breakdown of a single operation.

Detected Safety Violation (DSV)—An unsafe act by an individual.

Education Training Management System (ETMS)—A web based training management tool used to establish training requirements, track and document training completion, and project future requirements.

Flightline—Any area or facility including aprons, hardstands, and ramps on or in which aircraft may be parked, stored (AMARG gravel storage areas are not considered flight line), serviced or maintained and operated under their own power.

Foreign Object (FO)—A substance alien to aircraft, engines, munitions, missiles, drones, space systems, support equipment, AGE, trainers or components thereof that has been allowed to invade the product. Any FO in a maintenance area has the potential to cause damage.

High Performing Organization—A structured activity or group of activities whose performance exceeds that of comparable providers at a reasonable cost, whether public or private. Within the Air Force, the 412 MXG is the only designated HPO.

High Performing Organization (DoD)—A program in the Department of Defense that designates selected organizations as meeting high performance standards and achieving cost savings or cost avoidance. In some cases this designation is an alternative to a public-private competition. Within the Air Force, the 412 MXG is the only designated HPO.

Lea Maintenance Wing – The Lead Maintenance Wing (Lead Center) is assigned to an AFMC SSQ due to the technical expertise. The Lead maintenance Wing is responsible to arrange for SME's to provide technical guidance as needed and will be the liaison for their assigned SSQ's. They will ensure the other Wings (Centers) are involved in all decisions related to their assigned SSQ's. The Lead maintenance Wing will coordinate immediate changes to their assigned SSQ's with HQ AFMC/A4D.

Level of Effort (LOE) --- A support type project activity which must be done to support other work activities or the entire project effort. It usually consists of short amounts of work which must be repeated periodically. LOE is used to define the amount of work performance within a period of time and is measured in man days or man hours per day/week/month. Examples of such an activity may be assisting an engineer during pre-test, test, and post test or oiling machinery during manufacturing, etc. Since a LOE activity is not itself a work item directly associated with accomplishing the final project product, service or result, but rather one that supports such work, its duration is based on the duration of the discrete work activity it is supporting -- oiling machinery will start when manufacturing starts and finish when it finishes.

Maintenance Area—Any area where jet engine, on-equipment aircraft, aircraft assemblies, subassemblies, munitions, missiles, rockets, and support equipment maintenance operations are conducted to include hangars, shelters, docks (closed or semi closed), test cell, hush house, paint barns, fuels barns, back shops, industrial areas, on the flight line or outside maintenance areas such as wash racks, aprons, hardstands and run pads.

Maintenance Wing Quality Manual—A quality assurance manual provides an organized way of communicating how quality is managed; defines specific roles and responsibilities and defines how the organizations quality program is implemented. It provides the basic implementation guide required at each ALC to ensure all requirements standardized within each Production Group's QAP.

Major Finding—Defined as a condition that would endanger personnel, jeopardize equipment reliability, or warrant discontinuing process or equipment operation.

Management Inspections (MI)—MIs cover a broad category. These inspections are performed to follow up on trends, conduct investigations, or conduct research to get to the root cause of problems. Any level of management may request MIs. MIs may encompass PE/QVI trends and other inspection data, aborts and trends, in-flight emergency trends, high component or system

failure rates, suspected training deficiencies, and tasks outlined in aircraft dash-6 technical orders.

Minor Finding—Defined as an unsatisfactory condition that requires repair or correction, but does not endanger personnel, affect safety of flight, jeopardize equipment reliability, or warrant discontinuing a process or equipment operation.

Non-Release—System malfunction in which a weapon does not release from the delivery system.

Not In Compliance Areas (NICA)—NICAs are violations or an aggregate of violations to a particular area of policy which are significant enough to require headquarters assistance and/or oversight.

Permissive Action Link (PAL)—Device included in or attached to a nuclear weapons system to preclude arming and launching until insertion of a prescribed discrete code or combination.

Personnel Evaluation (PE)—A PE is an over-the-shoulder evaluation of a PAC certified mechanic/ technician or team performing a maintenance task.

Preventative Action—Action taken to identify and eliminate the causes of potential nonconformities (before they occur) or other undesirable potential situations.

Production Acceptance Certification (PAC)—Is a task-related program which ensures employees are certified to perform and accept completion of assigned work. PAC does this through systematic training, qualification and certification of individuals.

Quality Assessment Results (QAR) Rating—A numerical value reflecting the results of a quality assessment. There are two QAR ratings (1 and 3) each based on the number and severity of defect in the rated area.

Quality Assurance Plan (QAP)—The QAP identifies specific detailed quality processes and procedures relative to a particular organization. QAPs provide documentation of an organization's day-to-day operational procedures.

Quality Assurance Surveillance Plans (QASP)—The QASP identifies the functions and associated actions performed by a particular organization to ensure that requirements are performed in accordance with specified standards and that an appropriate level of quality control activities are in place and operational.

Quality Information Management Standard System (QIMSS)—A data collection system used to collect and analyze QA data.

Quality Review Board—An assembly of personnel established to review QA findings and metrics on maintenance wing quality programs.

Quality Verification Inspection (QVI)—An assessment/evaluation of a maintenance procedure, process, product, or portion thereof, while it is being accomplished, or after it has been completed and the task/WCD stamped.

Repair Network Integration (RNI) – CSAF initiative to develop an enterprise wide repair capability managed by a single process owner that provides integrated support to the warfighter. The end goals of RNI are: to be able to rationally manage the entire repair infrastructure; improve investment decision making; rationally allocate manpower for the repair network; develop standardized and repeatable management processes; and lower total system costs while increasing maintenance's ability to respond to changing Air Force requirements with greater agility and effectiveness.

Routine Inspection List (RIL)—A list of inspection requirements/areas generally designated by the MAJCOM to be conducted on a recurring basis?

Special Inspections (SI)—SIs are inspections not covered by CI checklists, Management Inspections, PEs, QVIs, or checklists accomplished as part of the Annual Technical Compliance Review. SIs can include, but are not limited to, applicable MAJCOM inspection checklists. Special Inspections when driven by the analysis of assessment data may be conducted at the discretion of the local QA. However, observed deficiencies beyond those identified as a checklist question (i.e., stumble on) will be recorded in QIMSS under the category of Special Inspection. SIs will be assigned a rating (QAR 1, 2 or 3) based on severity of the observation. SIs are designed to provide a flexible tool to complement other quality assessment types. The Maintenance Wing Quality Manual or QAP should clearly describe how SIs are conducted as part of an overall QA program.

Special Process --- Any production or service delivery process that requires continuous monitoring and control of suitable process parameters and product characteristics during production, installation, and/or servicing to insure that the specific requirements are met. An example of controlled parameters and product characteristics are: Time, Temperature, Pressure, Weight, application of Electrostatics Discharge Control, Critical Dimensions, etc. These processes shall be carried out by qualified mechanics.

Technical Data—Approved instructions relating to the management, repair, and/or use of a weapon system or component. Technical data includes, but is not limited to, TOs, Military Standards/Specifications, engineering drawings, schematic diagrams, flow diagrams, manufacturer's handbooks, manuscripts of Operations & Maintenance (O&M), Preliminary Technical Orders (PTOs), Commercial Technical Manuals (TMs, Research & Development (R&D) TMs, and other systems or equipment O&M procedures developed under AFMC or other acquisition agency directions during the systems acquisition phase.

Technical Data Violation (TDV)—An observation of any person performing maintenance without the proper technical data available and in use.

Unsatisfactory Condition Report (UCR)—A UCR is considered a condition other than a DSV or TDV, chargeable to the work center supervisor.

While Performing Maintenance—Any maintenance operation where personnel actively work on, around or near jet engine, on-equipment aircraft, aircraft assemblies, subassemblies, munitions, missiles, rockets, or support equipment and machinery that could potentially lead to or contribute to FO or FOD. Examples include but are not limited to, installing, removing, cleaning, repairing, inspecting, servicing, testing, and general hands on maintenance.

ATTACHMENT 13 (Added)

COMBAT WING ORGANIZATION (CWO)

A13.1. (Added) Table A13.1. (Added) prescribes CWO guidance and procedures. The chapters and paragraph numbers in **Table A13.1.** coincide with, or add supplemental guidance, and must be used in conjunction with AFI 21-101. Throughout this Table the civilian equivalent (unless no civilian may hold the position) may be applied to any reference to a military rank, grade or position. All chapters of AFI 21-101 apply to CWO's which denotes the standard organizational structure.

Table A13.1. (Added) CWO Maintenance Management

CWO
Chapter 1 - MANAGEMENT PHILOSOPHY AND POLICY
1.4. Maintenance Concept. The AF requires varying degrees of maintenance capability at different locations. Maintenance capability depends upon mission requirements, force protection, economics of repair, transportation limitations, component reliability, workload agreements, facility requirements, frequency of tasks, and special training required. This capability is described (in order of increasing capability) as either organizational, intermediate, or depot.
1.4.2. (Added) Organizational - First level of maintenance performed <i>on-equipment</i> (directly on aircraft or support equipment) at flightline level. This level generally includes repair, inspection, testing, servicing and/or calibration. Organizational level maintenance is part of the MGN.
1.4.3. (Added) Intermediate - Second level of maintenance performed <i>off-equipment</i> (on removed component parts or equipment) at backshop level. Primarily testing and repair or replacement of component parts. This level also includes Centralized Repair Facilities (CRFs). Intermediate level maintenance is part of the RN. Refer to 1.4.6.
1.4.4. (Added) Depot - Third level of maintenance performed on- or off-equipment at a major repair facility. Highest level of maintenance for more complex repairs. Depot level maintenance is part of the RN. Refer to 1.4.6.
1.4.5. (Added) Standard maintenance units and operational test units that possess non-traditional aircraft maintenance Air Force Specialty Codes (AFSC) such as 3DXXX, Communications/Electronics Systems career field, who perform maintenance on aircraft or aircraft support systems, must comply with the requirements identified within this instruction. In the event of a conflict with other guidance, this instruction will take precedence.
1.4.6. (Added) Repair Network. The MXGs shall support the development and implementation of the Repair Network Integration (RNI). The Air Force Repair Network is organized into four hierarchical levels; repair enterprise, product repair groups, repair networks and repair nodes. A repair network is a collection of repair nodes within product repair groups that support the repair enterprise. The management of the repair network is comprised of the Repair Network Manager

(RNM) (who may reside in the ALC ASD organization) whose role is to oversee and manage a collection of repair nodes within a specific product repair group. Node Managers will reside within the MXG's for all maintenance managed within the wings.
1.4.6.1. (Added) Repair Node. The Air Force Repair Node level is an individual organizational unit within repair network(s). The role of the Node Manager is to oversee and manage all shop activities pertaining to a specific Repair Node. The Node Manager shall:
1.4.6.1.1. (Added) Collect Repair Node Capability and Capacity (CAP2) data. The Node Manager will also develop Production Plans to support RNM Workload Plans. The Production Plan shall be provided to the RNM annually and when adjustments are made to the current plan. The Node Manager will provide the RNM with updates to CAP2 IAW workload allocation plans and ensure data accuracy.
1.4.6.1.2. (Added) Manage Repair Node operations to support approved performance goals. The Node Manager shall adjust Repair Node operations as required to meet performance goals. The Node Manager will communicate production deviations which exceed agreed upon upper or lower limits to RNM and chain-of-command. The Node Manager will provide mitigation strategy to address negative performance deviations. The Node Manager will communicate technical requirement changes via established processes to RNM and engineering as they become known.
1.4.6.1.3. (Added) Execute Shaping and Sizing actions as defined in the approved Network Shaping and Sizing Plan as approved by the governance structure. (Shaping and Sizing is a process for recommending a rational structuring of the Air Force's capability and capacity (manpower and infrastructure) to ensure an appropriate amount exists based on current and future mission objectives.)
1.4.6.1.4. (Added) Ensure squadron/group/wing leadership has access to and/or is aware of all communication exchanges with MAJCOMs and RNMs with regard to RNI processes, CAP2 data inputs and workload allocation changes/plans.
1.4.6.1.5. (Added) Participate in CPI activities, and share results with RNM.
1.8. Waiver Request. The Wing Commander/Director or Deputy, or equivalent will coordinate on waiver requests to this instruction. Send waiver requests to afmc.a4.workflow@wpafb.af.mil (AFMC/A4 Workflow) or mail to HQ AFMC/A4, 4375 Chidlaw Rd, Bldg 262 WPAFB OH 45433-5006.
1.10. Performance-Based Activities. Additional guidance on contract surveillance is provided in Chapter 18 of this instruction. Units will identify mission essential services and develop the necessary documents IAW applicable directives.
1.10.3. (Added) Developing Performance-Based Requirements Documents. Performance-based requirements documents (e.g., Statement of Objectives, Statement of Work, Performance Work

Statements) focus on desired outcomes and performance standards that communicate what the contractor is asked to provide. Requirements documents provide desired outcomes, performance standards, milestones (if appropriate), and metrics which not only measure the contractor's performance but reflect the management imperatives and initiatives that drive the AF (e.g., Mission Capable Rate) and other key efficiency and effectiveness metrics. Requirements documents do not provide "how to" details that dictate the contractor's organization, management, personnel development, or approach to completing work. The only exceptions are safety, environmental management, and security when the contractor operates on a military installation. Additionally, the contractor is required to follow applicable TOs when performing maintenance. Unlike MEO and HPO, contractor operations and personnel are not supervised by government personnel. Any changes to the scope of the work shall be reflected in an official change to the requirements document, which is provided to the contracting officer for modification of the contract.

1.11. Modification Management. Temporary (T-2) Aircraft Modifications will be accomplished in compliance with AFMC Instruction 21-126, Temporary 2 (T-2) Modification of Aerospace Vehicles.

1.11.3. **(Added)** Engineering and maintenance documentation contained in the T-2 Aircraft Modification data package as defined in AFMC Instruction 21-126, Temporary 2 (T-2) Modification of Aerospace Vehicles, is the technical data for modified assets.

1.13. Communications. An authorized communication system must be selected with the capability to effectively support the maintenance communication requirements, including mobility and host base interoperability IAW AFI 33-200 series publications. Wireless LANs (WLANs) must comply with all applicable AF 33-series publications. Radios shall be frequency-programmable.

1.13.1.1. **(Added)** Use of personal cell phone or communication devices is authorized in the industrial/production areas except while performing hands-on maintenance activities. Employees will remove themselves from any maintenance activity, aircraft, or high traffic areas prior to using a communication device.

1.13.1.2. **(Added)** Use of portable music/video players (boom boxes, stereos and other sizable devices), electronic games or other personal electronic hearing impairing devices is authorized in industrial production areas except where audio warning cues are used.

1.13.1.4. **(Added)** Contractor issued electronic and communication devices will follow the same guidance as official government issued electronic and communication devices.

1.13.2. MXG/CC, Civilian Leader (CL), Civilian Director (CD), or equivalent must develop communication plans IAW AFI 21-101 showing current needs, how they are satisfied, and the maintenance programming for future needs.

DEV 1.15. Maintenance Training. Within the TW, the MXG/CC will determine which Lead Command courses are mandatory for members assigned to multiple airframes.

<p>1.22. (Added) Maintenance Management Metrics. Metrics provide a measurement of performance and capability. Leaders, supervisors and technicians must have accurate and reliable information to make decisions. Primary concerns of maintenance managers are how well the unit is meeting mission requirements, how to improve equipment performance, identifying emerging support problems, and projecting future trends. Maintenance management metrics—sometimes called “health of fleet” indicators—are a crucial form of information used by maintenance leaders to improve the performance of maintenance organizations, equipment and people when compared with established goals and standards. Metrics often take the form of an “MC Rate” line chart or a “Dashboard” presenting a gauge of an organization’s effectiveness and efficiency. Properly used, metrics create a roadmap that helps determine where the unit has been, where the unit should be, and how the unit will get there.</p>
<p>1.22.1. (Added) The overarching objective of AF maintenance is to maintain aircraft and equipment in a safe, serviceable and ready condition to meet mission needs. Maintenance management metrics serve this overarching objective and shall be established or maintained by Headquarters AF, Major Commands, Wings and/or Squadrons to evaluate/improve equipment condition, personnel skills and long-term fleet health. Metrics shall be used at all levels of command to drive improved performance and adhere to well-established guidelines. Metrics must be:</p>
<p>1.22.1.1. (Added) Accurate and useful for decision-making.</p>
<p>1.22.1.2. (Added) Consistent and clearly linked to goals/standards.</p>
<p>1.22.1.3. (Added) Clearly understood and communicated.</p>
<p>1.22.1.4. (Added) Based on a measurable, well-defined process.</p>
<p>1.22.2. (Added) Analysis is crucial to improving organizational performance and is the key component of the metrics management process. Commanders and maintenance managers must properly evaluate maintenance metrics and rely upon the maintenance analysis section for unbiased information. Analysis sections shall draw upon information from various maintenance information systems for data. The Integrated Maintenance Data System-Central Database (IMDS-CDB), G081 (CAMS for Mobility), Reliability and Maintainability Information System (REMIS), Standard Base Supply System (SBSS), AF Knowledge Services (AFKS), Combat Ammunition System (CAS), and AF/A4-approved command-unique analysis tools are the primary data sources. A good maintenance manager does not manage the metrics, but rather uses metrics to focus resources and personnel to improve maintenance processes. Managers must also clearly understand and communicate the crucial linkage between goals, standards and metrics. The AF sets goals and standards for organizations, personnel and weapons systems that facilitate evaluation, comparisons and improvements. These standards are published separately by senior leadership and should be clearly understood at all levels of command. Leaders at every level must also support analysis and review metrics to properly drive improved performance. Maintenance analysts manage and track this process, but maintenance metrics, and the resulting improvements they drive, are inherently a leadership responsibility.</p>

1.22.3. (Added) AFMC Test Wing maintenance metric focus. Due to the unpredictable nature of the test environment, normal fleet availability and program execution indicators may not portray the most accurate picture of the health of the test fleet. Although the traditional maintenance metrics (MC Rate, Break Rate, etc) arm the maintenance leader with information needed to help effectively manage maintenance resources, the focus of AFMC's test wing maintenance differs somewhat from an operational wing. Therefore, AFMC's focus shifts from the MC Rate, to areas where AFMC's maintenance units have the most control – scheduled maintenance and deviations from the flying and test schedule. The key measurements of how well the maintenance unit manages scheduled and unscheduled maintenance are listed here:	
1.22.3.1. (Added) Test Schedule Effectiveness (TSE) Rate. Similar to the Flying Schedule Effectiveness for the CAF, TSE is a leading indicator and is a measure of how well the unit planned and executed the weekly flying and ground test event schedule. TSE is derived by comparing each day's deviations to the flying and ground test schedule. Deviations that decrease the TSE from 100 percent include: scheduled sorties/ground test events not accomplished because of maintenance, supply, operations, weather, HHQ, air traffic control, sympathy, or other reasons; scheduled events that actually start more than 30 minutes prior to scheduled start time; scheduled events that begin more than 30 minutes after their scheduled start time and events that are added to the schedule. Disruptions to the flying or ground test schedule, or constant configuration changes to test assets can cause turmoil on the flightline, send a ripple effect throughout other agencies, and adversely impact scheduled maintenance actions.	
1.22.3.1.1. (Added)	
TSE (%) = $\frac{\text{Total Ground and Sortie Events Scheduled} - \text{Total Deviations}}{\text{Total Ground and Sortie Events Scheduled}} \times 100$	
1.22.3.2. (Added) Maintenance Deviation Rate (MX Dev). Although all deviations to the test schedule are counted in the TSE calculation, the Maintenance Deviation Rate represents deviations to the flying/ground test schedule that are, for the most part, are within the maintenance community's control. All maintenance late take offs, ground aborts, cancellations, and maintenance additions are counted towards the rate. Although all deviations from the published schedule can cause turmoil on the flightline, maintenance supervision should focus on eliminating or minimizing schedule deviations due to maintenance.	
1.22.3.2.1. (Added)	
Maint Dev Rate (%) = $\frac{\text{Total Maintenance Deviations}}{\text{Total Ground and Sortie Events Scheduled}} \times 100$	
1.22.3.3. (Added) Scheduling Effectiveness for Maintenance (SEM). SEM is a primary focus for AFMC. It measures the overall efficiency and effectiveness of scheduled maintenance, as well as the unit's effectiveness in responding to unscheduled maintenance. SEM helps identify turmoil in meeting the wing's test requirements. It is a weighted combination of a unit's Total Scheduling Effectiveness for Maintenance and Maintenance Scheduling Effectiveness rates, both explained below. SEM includes total scheduled test events, both flight and ground. The unit should focus on completing scheduled maintenance events, as scheduled, including	

documentation, as well as minimizing maintenance deviations to the test schedule.
1.22.3.3.1. (Added) SEM (%) = $\frac{[(TSEM \% \times 10) \times 0.7] + (MSE \% \times 10) \times 0.3}{10}$
1.22.3.4. (Added) Maintenance Scheduling Effectiveness (MSE). This is a leading indicator that measures success in the unit's ability to plan and complete inspections and periodic maintenance, including documentation, on-time per the maintenance plan. Deviations to the plan are recorded. A low MSE rate may indicate a unit is experiencing turbulence on the flightline or in the back shops. This indicator is primarily used as feedback to maintenance managers on the success and adherence to scheduled maintenance plans and actions. To compute the MSE, you must know the number of maintenance actions scheduled and accomplished as scheduled along with each action's weighted value (based on the importance of the event and established by MAJCOM directives).
1.22.3.4.1. (Added) MSE (%) = $\frac{\text{Total Points Earned}}{\text{Total Points Possible}} \times 100$
1.22.3.5. (Added) Total Scheduling Effectiveness for Maintenance (TSEM) – TSEM is another focus area for AFMC's flightline maintenance community. TSEM measures the effect of maintenance deviations on the test schedule. The TSEM rate only considers schedule deviations caused by the maintenance complex.
1.22.3.5.1. (Added) TSEM (%) = $\frac{\text{Total Gnd and Sortie Events Sched} - \text{Total MX Devs}}{\text{Total Gnd and Sortie Events Sched}} \times 100$
1.22.4. (Added) Traditional Maintenance Metrics. Metrics are often grouped into various categories, including leading or lagging indicators. Leading indicators show a problem first, as they directly impact maintenance's capability to provide resources to execute the mission. Lagging indicators follow and show firmly established trends. Maintenance leaders must review sortie production and maintenance health of fleet indicators constantly and be knowledgeable about maintenance indicators that highlight trends before they become limiting factors. This section lists the primary maintenance metrics alphabetically with a description and the formula for the metric. Referenced Maintenance Status Codes are found in AFI 21-103, <i>Equipment Inventory, Status and Utilization Reporting</i> , Attachment 2; Flying Codes are found in TO 00-20-2, <i>Maintenance Data Documentation</i> , Appendix L.
1.22.4.1. (Added) Aircraft Possession. A key factor in metrics involves aircraft "possession." The AF mandates each aircraft will always be owned or "possessed" by a designated organization. Possession is an indicator of an organization's or aircraft fleet's health. Aircraft that are under the control of their owning base are possessed by that organization. An aircraft that flies to depot for maintenance/inspection or is repaired by a depot team at the base is temporarily possessed by depot. In calculating the various aircraft maintenance metrics, possession is calculated in units of hours normally for specific time periods (e.g., monthly,

annual).
1.22.4.2. (Added) (Total) Abort Rate (AR). A unit's abort rate is a leading indicator of both aircraft reliability and quality of maintenance performed. An abort is a test event that ends prematurely and must be re-accomplished. The abort rate may be measured separately as ground or air aborts. Abbreviations are: GA = Ground Aborts; AA = Air Aborts; and NTI = Non-Test Induced
1.22.4.2.1. (Added)
Total AR (%) = $\frac{\# \text{ Maint GA (NTI)} + \# \text{ AA (NTI)}}{\text{Total Sorties Flown} + \text{Ground Aborts}} \times 100$
1.22.4.3. (Added) Aircraft availability. Percentage of a fleet not in a Depot possessed status or NMC aircraft (that are unit possessed). NOTE: The metric may be created at the Mission Design (MD)/MDS level or may be grouped by fleet (e.g., Aggregate, Bombers, Fighters) to determine "Aircraft Availability".
1.22.4.3.1. (Added) Availability rate = $\frac{\text{MC hours}^*}{\text{Total Possessed Hours (TPH)}^{**}} \times 100$
(Added) 1. * MC Hours consists of Possession Purpose Codes (PPC): CA, CB, CC, CF, EH, EI, IF, PJ, PL, PR, TF, TJ, ZA, and ZB.
(Added) 2. ** Total Possessed Hours (TAI) consist of the following PPC: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XW, XZ, ZA, and ZB
1.22.4.4. (Added) Break Rate (BR). The break rate is a leading, flying-related metric. It is the percentage of aircraft that land in "Code-3" or "Alpha-3" for Mobility AF (MAF), status. This metric primarily indicates aircraft system reliability. It may also reflect the quality of aircraft maintenance performed. If Fix Rates (refer to paragraph 1.15.4.8.) are used as a measurement of maintainability, the Break Rate is the complementary measurement of reliability. For true evaluation of equipment/system reliability, measurements must be taken at the system/subsystem level. It is also an excellent predictor of parts demand. Several indicators that follow break rate are Mission Capable (MC), Total Not Mission Capable for Supply (TNMCS), Cannibalization Rate (CR) and Repeat/Recur (R/R).
1.22.4.4.1. (Added) BR (%) = $\frac{\text{Number of Sorties that Land "Code-3"}}{\text{Total Sorties Flown}} \times 100$
1.22.4.5. (Added) Cannibalization Rate (CR). The CR is a leading indicator that reflects the number of cannibalization (CANN) actions (removal of a serviceable part from an aircraft or engine to replace an unserviceable part on another aircraft or engine or to fill an Readiness Spares Package (RSP)). In most cases, a cannibalization action takes place when assets are not available to meet mission needs or the AFGLSC cannot deliver the part when needed and mission requirements demand the aircraft be returned to an MC status. The CR is the number of

cannibalization actions per total sorties flown. This rate includes all aircraft-to-aircraft, engine-to-aircraft, and aircraft/engine to RSP cannibalization actions.
1.22.4.5.1. (Added) CR (%) = $\frac{\text{Number of Aircraft and Engine CANNs}}{\text{Sorties Flown}} \times 100$
1.22.4.6. (Added) Deferred (or Delayed) Discrepancy (DD) Rate (DDR). The DDR is a leading indicator that should be closely evaluated in comparison to other metrics. This rate represents the average deferred discrepancies across the unit's average possessed aircraft fleet. Discrepancies are considered deferred when: a) they are discovered and the decision is made to defer them, b) discrepancies are scheduled with a start date greater than 5 calendar days after the discovery date, or c) discrepancies are awaiting parts with a valid off base requisition. Delayed discrepancies may be Awaiting Maintenance (AWM) or Awaiting Parts (AWP). Although minor maintenance actions must sometimes be deferred or delayed to a more opportune time, maintenance should try to keep this rate as low as possible. If delayed discrepancies can't be scheduled/combined with a more extensive maintenance action, maintenance schedulers should routinely schedule their aircraft down for a day when required to work deferred discrepancies. The DDR metric measures AWM + AWP rates, though individual AWM and AWP rates can and should also be monitored.
1.22.4.6.1. (Added) Total DDR (%) = $\frac{\text{Total (Snapshot) AWM + AWP Discrepancies}}{\text{Average Aircraft Possessed}}$
1.22.4.6.2. (Added) AWM DDR (%) = $\frac{\text{Total (Snapshot) AWM Discrepancies}}{\text{Average Aircraft Possessed}}$
1.22.4.6.3. (Added) AWP DDR (%) = $\frac{\text{Total (Snapshot) AWP Discrepancies}}{\text{Average Aircraft Possessed}}$
1.22.4.7. (Added) Departure (Logistics) Reliability (DR) Rate (DRR). This is a leading metric used primarily by the MAF to show a composite of supply, airfield saturation or maintenance problems. The on-time standard for departures are those within 15 minutes of the daily scheduled departure time. The metric provides the commander with an objective measure of the health of the air mobility system and reflects the percentage of departures that are on-time. The main focus of the departure reliability metric is to strengthen the air mobility system through accountability for process improvement. This metric may also be subdivided into other categories (e.g., worldwide departure or en route).
1.22.4.7.1. (Added) DRR (%) = $\frac{\text{Number of Departures} - \text{Number of Logistics Delays}}{\text{Number of Departures}} \times 100$
1.22.4.8. (Added) Fix Rate (FR). The FR is a leading indicator showing how well the repair process is being managed. It is a percentage of aircraft with a landing status code of 3 (includes system cap codes 3 and 4) returned to a flyable status in a certain amount of time (clock hours).

Problems found by maintenance after the aircraft lands (ground found) are not considered in the fix time. The fix time stops when all Landing Status Code 3 Pilot Reported Discrepancies (PRDs) are fixed even if the aircraft remains NMC. This metric is an excellent tool to track "dead time" in aircraft repair processes because it measures the speed of repair and equipment maintainability. The common, standard interval for this metric is 12-hours. However, fighter units typically measure fix rate at shorter intervals (4 and/or 8 hours) along with the 12-hour rate.

1.22.4.8.1. (Added)

$$\text{FR (\%)} = \frac{\text{"Code-3" Breaks Fixed Within 12 Hours of Landing}}{\text{Total "Code-3" Breaks}} \times 100$$

1.22.4.9. (Added) Hangar Queen (HQ) (Average) Rate. Refer to **Chapter 14** of this instruction for HQ categories/criteria. This indicator is used to evaluate management of the Hangar Queen program and to assist units with problems beyond their control. The HQ rate captures the average number of aircraft HQ days (all categories) for a specified reporting period.

1.22.4.9.1. (Added)

$$\text{HQ (\%)} = \frac{\text{Total Acft Days in all HQ Categories (in report period)}}{\text{Days (in report period)}} \times 100$$

1.22.4.10. (Added) Home-Station Logistics Departure Reliability (HSLDR) Rate. This is a leading metric used primarily by the MAF for airlift aircraft. This delineates down to only first-leg departures of unit-owned aircraft departing home station.

1.22.4.10.1. (Added)

$$\text{HSLDR Rate (\%)} = \frac{\text{\# of HS Departures} - \text{\# of HS Logistics Delays}}{\text{\# of HS Departures}} \times 100$$

1.22.4.11. (Added) Isochronal Inspection (ISO) Rate. This leading metric measures the average time until next major inspection remaining on the fleet. It should be approximately half the inspection interval and should appear as a diagonal line when the fleet ISO average is portrayed graphically in a Time-Distribution Interval (TDI) (e.g., "scatter gram"). An ISO TDI is a product that shows hours remaining until the next phase inspection (PH) on each aircraft possessed by a unit. However, a unit may have good reasons to manage its ISO flow so the data points define a pattern other than a diagonal line.

$$\text{1.22.4.11.1. (Added) ISO Rate} = \frac{\text{Total Hours of All Possessed Aircraft Until Next ISO}}{\text{Total Possessed Aircraft Assigned}}$$

1.22.4.12. (Added) Mission Capable (MC) Rate. Though this is a lagging indicator, the MC rate is perhaps the best-known yardstick for measuring a unit's performance. It is the percentage of possessed hours (excluding aircraft in "B-Type" possession purpose code/purpose identifier code status: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX) for aircraft that are FMC or PMC for specific measurement periods (e.g., monthly or annual). A low MC rate may indicate a unit is experiencing many hard breaks, parts supportability shortfalls or workforce management issues. Maintenance managers should look for workers deferring repairs to other shifts,

inexperienced workers, lack of parts, poor in-shop scheduling, high cannibalization rates or training deficiencies. High commitment rates may also contribute to a lower MC rate. The key is to focus on negative trends and identify systemic, underlying causes. Further, the root factors of the MC rate should be measured, evaluated and reported through the use of the TNMCM, TNMCS and NMCB rates.	
1.22.4.12.1. (Added) MC (%) = $\frac{\text{FMC Hours} + \text{PMC Hours}}{\text{Possessed Hours}} \times 100$	
1.22.4.12.2. (Added) Total Not Mission Capable Maintenance (TNMCM) Rate. Though a lagging indicator, the TNMCM rate is perhaps the most common and useful metric for determining if maintenance is being performed quickly and accurately. It is the average percentage of possessed aircraft (calculated monthly/annually) that are unable to meet primary assigned missions for maintenance reasons (excluding aircraft in “B-Type” possession identifier code status). Any aircraft that is unable to meet any of its wartime missions is considered Not Mission Capable (NMC). The TNMCM is the amount of time aircraft are in NMC plus Not Mission Capable Both (NMCB) status. Maintenance managers should look for a relationship between other metrics such as R/R, BR and FR to the TNMCM Rate. A strong correlation could indicate heavy workloads (e.g., people are over tasked), poor management, training problems or poor maintenance practices. The TNMCM is also called “out for maintenance.”	
1.22.4.12.2.1. (Added) TNMCM (%) = $\frac{\text{NMCM Hrs} + \text{NMCB Hrs}}{\text{Possessed Hours}} \times 100$	
1.22.4.12.3. (Added) Total Not Mission Capable Supply (TNMCS) Rate. Though this lagging metric may seem a “AFGLSC responsibility” because it is principally driven by availability of spare parts, it is often directly indicative of maintenance practices. For instance, maintenance can keep the rate lower by consolidating feasible cannibalization actions to as few aircraft as practical. This monthly/annual metric is the average percentage of possessed aircraft that are unable to meet primary missions for supply reasons. The TNMCS rate is the time aircraft are in NMCS plus NMCB status. TNMCS is based on the number of airframes out for mission capable (MICAP) parts that prevent the airframes from performing their mission (NMCS is not the number of parts that are MICAP). Maintenance managers must closely monitor the relationship between the Cannibalization Rate (CR) and TNMCS.	
1.22.4.12.3.1. (Added) TNMCS (%) = $\frac{\text{NMCS Hrs} + \text{NMCB Hrs}}{\text{Possessed Hours}} \times 100$	
1.22.4.13. (Added) Primary Aerospace Vehicle Authorized (PAA) vs. Possessed or Primary Possessed Rate. PAA are those aircraft authorized for a unit to perform their operational mission(s). It forms the basis to allocate operating resources to include manpower, support equipment, and flying hour funds. This metric shows a comparison of the unit’s PAA versus average possessed aircraft for a particular time period. It identifies units below PAA so AFMC can assist in reallocating resources to support contingency taskings or to reduce flying hour requirements. Reference AFI 16-402, <i>Aerospace Vehicle Programming, Assignment,</i>	

<i>Distribution, Accounting, and Termination.</i>
1.22.4.13.1. (Added) P/P (%) = $\frac{\text{Average Number of Possessed Aircraft}}{\text{Total Unit Aircraft PAA}} \times 100$
1.22.4.14. (Added) Personnel Availability (PA). Personnel availability simply provides a measure of manning status. It compares the number of personnel authorized to the number of personnel available. A maintenance manager may find it useful to review data based on skill level. In which case, compare the personnel authorized to the number of personnel holding a specific skill level. The number authorized is based on the Unit Manning Document. The number available includes only those available for duty, which excludes those who are reassigned, on leave, Temporary Duty (TDY), etc.
1.22.4.14.1. (Added) PA (%) = $\frac{\text{Total Number of Personnel Available}}{\text{Total Number of Personnel Authorized}} \times 100$
1.22.4.15. (Added) Phase Flow (PF) Average. This leading metric measures the average phase time remaining on the fleet. It should be approximately half the inspection interval and should appear as a diagonal line when the fleet PF average is portrayed graphically in a TDI. A phase TDI is a product that shows hours remaining until the next phase on each aircraft possessed by a unit. However, a unit may have good reasons to manage its phase flow so the data points define a pattern other than a diagonal line. For example, in preparation for a long-distance overseas deployment, a unit may need to build up the average phase time (average fleet time) remaining on its fleet, because phase capability may be limited for a short time. Beware of gaps or groupings, especially on aircraft with less than half the time remaining to phase.
1.22.4.15.1. (Added) PF = $\frac{\text{Total Hours of All Possessed Aircraft Until Next Phase}}{\text{Total Possessed Aircraft Assigned}}$
1.22.4.16. (Added) Repair Cycle Processing (RCP) Total Time/Rate. Though primarily considered a “supply-related metric,” this indicator can be an excellent local management tool. It is the average time expressed in days that an unserviceable asset spends in the repair cycle at a unit. This indicator is for repairable aircraft parts only; it does not include engines or support equipment. The clock begins when the replacement part is issued to the flightline and ends when the serviceable asset is returned from the repair facility to the parts store for reissue. To improve the process of repairing parts, the different steps in that process must be measured.
1.22.4.16.1. (Added)
RCP (%) = $\frac{(\text{Pre-Mx} + \text{Repair} + \text{Post-Mx Days}) - \text{AWP Days}}{\text{Number of Items Turned In}} \times 100$
1.22.4.17. (Added) Repeat/Recurring (R/R) Discrepancy Rate. This metric is a leading indicator and perhaps the most important and accurate measure of the unit's maintenance quality. It is the average number of repeat and recur system malfunctions compared to the total number of aircrew reported discrepancies. A repeat discrepancy is when the same malfunction occurs in

a system/subsystem on the next sortie/sortie attempt after the discrepancy originally occurred and was cleared by maintenance (including CNDs/no-defect-noted, etc). A recurring discrepancy is when the same system/subsystem malfunction occurs on the 2nd thru 4th flights/attempted flights after the original flight in which the malfunction occurred and was cleared by maintenance (including CNDs/ no-defect-noted, etc). A high R/R rate may indicate lack of thorough troubleshooting; inordinate pressure to commit aircraft to the flying schedule for subsequent sorties; or a lack of experienced, qualified or trained technicians. The more complex the weapon system and the greater the operations tempo, the more susceptible a unit is for repeat or recurring discrepancies. Examine each R/R discrepancy and seek root causes and fixes. The goal should be to keep all repeat and recurring discrepancies to a minimum.

$$1.22.4.17.1. \text{ (Added) R/R (\%)} = \frac{\text{Total Repeats} + \text{Total Recurs}}{\text{Total Pilot Reported Discrepancies}} \times 100$$

1.22.4.18. **(Added)** Upgrade Training (UT) Rate. This metric reflects the percentage of technicians in upgrade training. The goal should be to keep the combined total less than 40 percent because the higher the number, the greater the training burden. Training should be given high priority, as the number of personnel in training (and more importantly, the quality of the maintenance training program) invariably affects other aircraft metrics (e.g., R/R or FR) in ways that may not be immediately obvious.

$$1.22.4.18.1. \text{ (Added) UT (\%)} = \frac{\text{Number of Technicians in Upgrade Training}}{\text{Total Number of Technicians}} \times 100$$

1.22.4.19. **(Added)** Utilization (UTE) Rate. The UTE rate is a leading indicator, but serves as a yardstick for how well the maintenance organization supports the unit's mission. The UTE rate is the average number of sorties or hours flown per Primary Aerospace vehicle Authorized (PAA) per month as found in the HAF/A3O PB documents. This measurement is primarily used by operations in planning the unit's flying hour program. Maintenance uses this measurement to show usage of assigned aircraft. Since UTE rates are used for planning, actual UTE rates (computed at the end of the month) are used to evaluate the unit's monthly accomplishment against the annual plan. Typically, Combat AF (CAF) units measure the sortie UTE rate, while MAF units measure the hourly UTE rate to more accurately measure the combined performance of operations and maintenance.

$$1.22.4.19.1. \text{ (Added) UTE Rate} = \frac{\text{Sorties (or hours) Flown per Month}}{\text{PAA per Month}}$$

1.23. (Added) Support Agreements (SA). Maintenance organizations may be tasked to support functions not related to the primary unit mission. Intra-service, inter-service, inter-command, and international support agreements outline the degree of support provided and the responsibilities of the supported function. The agreements must be developed and reviewed in terms of possible impact on the primary unit mission and all other existing agreements and fully coordinated with the LRS plans function.

1.23.1. **(Added)** The support agreement will also identify the manpower required to support the workload as agreed upon by both organizations.

Chapter 2 - SAFETY

2.7.1. **(Added)** Occupational Safety and Health Administration (OSHA) officials, as representatives of the Secretary of Labor, may conduct inspections of non military-unique workplaces and operations where AF civilian personnel work. (The inspections may be unannounced). OSHA inspectors may question or privately interview any employee, supervisory employee, or official in charge of an operation or workplace.

2.7.2. **(Added)** Federal OSHA officials may perform OSH inspections of AF workplaces in areas where the US holds exclusive federal jurisdiction (including government owned contractor operated facilities).

2.7.3. **(Added)** State OSHA officials, operating under a federally approved plan and subject to the terms of any variance, tolerance, or exemption granted by the Department of Labor, may enforce state OSHA standards in contractor workplaces. At overseas location, local government agencies may conduct inspections of AF operations where host nation personnel are employed or contractor facilities or operations as stipulated in the status of forces or country-to-country agreement IAW AFI 91-202.

Chapter 3 - GENERAL RESPONSIBILITIES FOR COMMANDERS AND KEY LEADERS

DEV 3.2.1. Daily “Wing Standup” meeting may be delegated to the MXG/CC or OG/CC. At a minimum, the WG/CC will chair this meeting once a week.

3.4.1.43. The link for the Propulsion Center of Excellence is <https://cs.eis.afmc.af.mil/sites/Propulsion/PCOE/default.aspx>.

3.4.1.72. **(Added)** Approve annual workload allocation plans as applicable for all repair nodes within the MXG

3.7.21. **(Added)** Monitor new requirements for training, equipment authorizations, special tools, E-Tools, workspace, facilities, and manning for impact on unit’s capability to perform its mission.

3.7.22. **(Added)** When the squadron is part of a Repair Network, will assign by letter any node manager(s) responsible to a specific repair network.

3.8.4. Ensure the engineering data service center (EDSC) is used to obtain information/specifications when technical orders (TO) do not provide enough detail.

3.9.42. **(Added)** When the flight is part of a Repair Network, ensure that the node manager(s) communicate to their respective repair network manager(s) changes in capability and capacity

and any deviations in production.
3.10.4 AFMC CV-22 will use authorized software configuration matrix (ASCM) for configuration control instead of ACPCNS for software configuration.
Chapter 4 - AIRCRAFT/HELICOPTER MAINTENANCE SQUADRONS (AMXS/HMXS)
4.2.13. (Added) Ensure all personnel who are dispatched for any task requiring landing gear handle movement are authorized and qualified to perform landing gear handle movement and are listed on the special certification roster (SCR), by aircraft type and personnel duties; gear retraction supervisor, 7-level team supervisor, the gear handle operator (B-1, B-2, B-52, 135 Series, C-17, C-5, 747, CV-22).
4.2.13.1. (Added) Specific duties of the 7-level or civilian equivalent gear retraction supervisor are as follows:
4.2.13.1.1. (Added) During aircraft and equipment maintenance, ensure no movement of the gear handle from the full down position without 7-level or civilian equivalent authorization and verification that the handle needs to be moved for the task being performed.
4.7.1.2. (Added) Include FO/FOD reporting in debriefing guide.
4.8.1.7. AFMC will not perform aircraft acceptance inspections.
4.10. Weapons Section (excluding systems listed in para 4. 11): Weapons Section Chief duties may be performed by civil service equivalent.
4.10.1. Civilian equivalent will be synonymous with Weapons section NCOIC.
4.11. Weapons Section (Helicopter/CV-22/UAS Units). Weapons personnel detached from the 46 TW and assigned to Holloman AFB will adhere to the guidance contained in this paragraph.
4.12.4.2. (Added) Limit user maintenance for TMDE assigned to support sections to those tasks within the squadron's capability.
4.14. (Added) Logistics Test Squadron (MXLS). Performs Logistics Test and Evaluation (LT&E) activities. Provides continued emphasis and awareness of LT&E activities and the necessity for early LT&E involvement in Developmental Testing. Establishes standards and procedures for accomplishment of LT&E. Ensures compliance with statutory directives; Air Force environmental management, safety, security instructions; and technical orders. Develops and provides training and tools to improve the LT&E process within the acquisition community. Assists in developing logistics test plans, data analysis plans, and technical reports. Assist local management in test execution during LT&E program involvement. Acts as a focal point with Engineering and Program Management for LT&E activities. Plans, directs, and manages the

development and acquisition of technical data in support of System Groups. Manages the Operating Locations' Central Technical Order Control Units. Provides staff assistance in the development and implementation of Technical Order Development policies and procedures.

4.14.1. **(Added)** Logistics Test and Evaluation. Process of testing and evaluating a weapon system to determine whether logistics support and system readiness objectives are met. LT&E applies the use of the Logistics Support Elements (AFI 63-101) to each of four test disciplines: Logistics, Reliability and Maintainability, Human Systems Integration and Environmental. LT&E also encompasses the management of the development of technical data related to weapons system acquisition. Tests and ensures technical data are adequate to support weapons systems for operational units.

4.15. (Added) Global Hawk (GH) In-Flight Maintenance Procedures and Documentation. GH Remotely Piloted Vehicle (RPV) reporting will use standard Air Force landing status codes. Mission Crew Element (MCE) and Launch and Recovery Element (LRE) status will be reported separately from aircraft status (i.e., Aircraft Code 1, MCE Code 1, LRE Code 1). Aircraft, MCE and LRE will retain separate 781 forms binders. Mission capable status will also be tracked separately. Discrepancies will not be entered into 781 forms or IMDS for any asset directly involved with the mission while the aircraft is airborne. Units will develop a manual debrief data sheet which is maintained and controlled by the debrief section by mission number. This debrief data sheet will be used to annotate in-flight maintenance and pilot reported discrepancies. Continuation sheets will be annotated as #2, #3, etc of XX pages. Once the mission ends and the post-mission debrief is completed, the 781 forms, IMDS and mission capable status will be annotated.

4.15.1. **(Added)** GH RPV Ground Station In-flight Maintenance procedures: UAS Ground Station In-flight Maintenance is intended to provide repair of maintenance discrepancies while allowing the mission to continue. Discrepancies discovered during flight will not be documented into the AF Form 781As or entered into IMDS until after the mission is ended. Upon notification from the pilot, maintenance technicians will be dispatched to the MCE/LRE. Maintainers will respond with the debrief data sheet, provided by the debrief section. The pilot will document the discrepancy and provide written release for maintenance on the debrief data sheet. Maintenance will not be performed until the pilot releases the aircraft for maintenance. The pilot in control of the system during the mission will always be the final authority as to what, when and for how long maintenance actions will be performed during flight. The maintainer will return the debrief data sheet (with maintenance actions annotated) to the debrief section for inclusion into the final mission debrief. If additional maintenance actions are responded to during the same mission, the same debrief data sheet will be used. Use continuation sheets as required.

Chapter 5 - MAINTENANCE SQUADRON (MXS)

5.5.1.4. **(Added)** The squadron commander may assign the lead-acid battery section to another flight. When this option is chosen, electrical/environmental personnel will train gaining flight personnel on all required tasks, ensuring lead-acid battery disposal procedures meet environmental standards and are effectively controlled for battery accountability purposes.

5.6.1. AGE flights that organize into teams for concentrated support efforts will coordinate this change through AFMC/A4MM prior to reorganization.
5.6.2.16. (Added) Utilize AF Form 1067 and submit through proper channels for all equipment modifications regardless if they are temporary or permanent. Units possessing equipment that has been previously modified will request modification approval from the item engineering authority and document modifications in the equipment historical records IAW TO 00-20-1. All units shall submit a deficiency report IAW TO 00-35D-54 on all equipment received from the manufacturer, PEM or supply system that are not in the original configuration as outlined in the end-item TO. In special circumstance field units may perform temporary work prior to receiving AF Form 1067 approval only to determine if a modification is feasible with coordination from the applicable item engineer, supervision, and quality assurance office.
5.10.2.2. (Added) When directed by the MXG/CC, MXG/CD, establishes specialized maintenance rig teams to accomplish flight control, canopy, landing gear, door systems, and other systems rigging.
5.10.2.2.1. (Added) These teams contain personnel trained on each particular system. Each team may participate in flight crew debriefing, troubleshooting, repairing, or replacing components as necessary.
5.10.2.2.2. (Added) When dispatched as a team to troubleshoot CND, repeat/recur, and FCF discrepancies, document all items inspected, tested, removed, or replaced in AFTO Form/IMT 781A and MIS.
5.10.2.2.3. (Added) Reviews corrective actions prior to final release of the aircraft.
5.12.1.22. (Added) Courtesy copy all external support memorandums of agreement (MOA) with HQ AFMC/A4M prior to finalization.
5.12.1.23. (Added) Coordinate all technical propulsion maintenance waivers through HQ AFMC/A4MM.
5.12.1.24. (Added) Ensure that accurate and timely hush house and test cell status is updated or verified in the RAMPOD tracking system whenever the status of these pieces of equipment changes.
5.12.4.7. For units operating F-22 weapon system, IMIS will create multiple job control numbers.
5.12.4.7.1.5. For units operating F-22 weapon system, use the appropriate Logistics Control Number (LCN).
5.12.4.7.1.11. When example not provided in applicable TOs, units will develop MDS specific borescope inspection worksheets and coordinate through QA.

5.12.5.8. (Added) Assign a primary and alternate custodian to gain RAMPOD access for test cell and hush house -107 reporting and status updates.
5.12.5.8.1. (Added) RAMPOD custodians are required to request engineering support using the RAMPOD system. They also are required to change the status of the test cell and hush house equipment whenever equipment status changes.
5.12.6.1. (Added) Ensure only qualified personnel are authorized to clean and inspect bearings.
5.12.6.2. (Added) Establish local procedures to track bearings through the cleaning, inspection, and storage process.
5.12.6.3. (Added) Establish a local bearing handling and inspection training program. Coordinate through local QA.
5.13.4.7. When designating individuals who may approve priority calibration or repair request, the PMEL flight chief will delegate approval authority in writing.
5.13.4.12. (Added) Approve CANNs after coordination with owning work centers (OWCs).
5.13.6.2.7. Reasonable period is defined as, within five duty days after being notified equipment is ready for pick up. For geographically separated users, coordinate with the PMEL flight chief to establish acceptable number of days to pick-up completed TMDE.
5.13.6.2.9. The TMDE flight chief may add other priority categories if needed.
5.13.7.1.1. (Added) Monitor and control AWP TMDE using supply generated and internally generated reports.
5.13.7.1.2. (Added) Store parts received for AWP items with the end item.
5.13.7.1.3. (Added) Attach a copy of source document of outstanding requisitions with AWP TMDE.
5.13.7.5. Notify the OWC of TMDE status change to AWP and backorder/ delivery status of parts on order.
5.13.7.10. (Added) Recommend cannibalization (CANN) actions to TMDE flight chief or civilian equivalent.
5.13.7.11. (Added) Transfer all items that come out of AWP to AWM when all parts are received.
5.13.7.12. (Added) Manage bench stocks to ensure current listings are available, contents of

bench stocks are limited to frequently used parts, and establish fill quantities.
5.13.7.13. (Added) Maintain records and source documents for repair parts used in equipment belonging to reimbursable work centers.
5.13.7.13.1. (Added) Submit a monthly report to TMDE flight chief to facilitate processing of requests for reimbursement.
5.13.7.13.2. (Added) Records are not necessary if the reimbursable unit's supply account is used for purchasing their own repair parts.
Chapter 6 - MAINTENANCE OPERATIONS SQUADRON
6.2.1.5. Include AFMC AVDO and AFMC Aircraft Fleet Manager (AFMC/A3F) in coordination's for all proposed assignment/possession changes.
6.2.1.6.1. (Added) Ensure data is valid and submitted to meet MAJCOM reporting suspense requirements. Before submission, reconciliation and coordination with squadron and group leadership is required to ensure comments fully explain causes of the data.
6.2.1.12. (Added) Ensure processes and procedures are in place and personnel are designated to support accomplishment of Flying Hour Program tracking and reconciling IAW intent of AFI 21-103, <i>Equipment Inventory, Status and Utilization Reporting</i> .
6.2.2.28. (Added) MOC will publish procedures for a local call-sign system.
6.2.3.5. Engine Special Inspections (SI) must be loaded in IMDS or G081 to ensure availability of information to all maintenance activities. Units are authorized to use a separate AFTO Form 781K for each engine to document and monitor SIs and TCTOs.
6.2.3.9. Performs and documents annual reviews of both paper (if applicable/maintained) and automated engine records IAW TO 00-20-1. (Paper history can be maintained in conjunction with automated history.) In addition to TO 00-20-1 requirements, the following historical entries in MIS are required for serially tracked engines, modules, components and major assemblies:
6.2.3.9.1. (Added) Engine removal. Conduct a detailed records review to ensure utilization was properly recorded against the engine and sub-components. A removal narrative is required for all removal actions, except for HOW MAL codes 866, 879, and 800. Use the correct Automated History Event indicator when processing MIS transactions to ensure removal times are posted to automated AFTO IMT 95. Ensure utilization is updated in the MIS before processing the engine removal.
6.2.3.9.2. (Added) Special inspections, occurrences, and all borescope. Include total time (EOT, TACs, CCYs, etc.), findings (no defect noted, discrepancies noted, etc.) and other pertinent information.

6.2.3.9.3. (Added) Engine test cell rejects IAW TO 00-25-254-1. Include total time (EOT, TACs, CCYs, etc.), the reason for reject, any specific test cell data and a summary of work performed at the test cell.
6.2.3.9.4. (Added) FSE or modifications. Include total time (EOT, TACs, CCYs, etc.), a brief summary of modifications to include part number and serial number of modified items, and other pertinent information.
6.2.3.9.5. (Added) Shipping engine, module (uninstalled), and major assemblies (uninstalled). Include the reason for shipment, the destination, and other pertinent information.
6.2.3.9.6. (Added) Receiving/acceptance inspections, transfers and shipment of engines to designated repair facilities for engine, module (uninstalled), and major assemblies (uninstalled). Include received or departing from unit, discrepancies, and other pertinent information.
6.2.3.9.7. (Added) Data corrections. Include corrections to erroneous entries and other pertinent information.
6.2.3.9.8. (Added) Work completed on engine, module (uninstalled), and major assemblies (uninstalled). Include total time (EOT, TACs, CCYs, etc.) and a brief maintenance summary to include major assemblies replaced, test cell run, engine preservation, annual engine records reviews and other pertinent information (e.g., FOD).
6.2.3.18.1. (Added) Coordinate with the propulsion flight to ensure a copy of the latest work folder accompanies permanent and transferred engines.
6.2.3.19.4.1. (Added) Maintain original copies of historical records at home station unless directed to transfer the engine to a gaining SRAN.
6.2.3.19.4.2. (Added) Perform engine manager duties for shipment and receipt of all assigned modules, related equipment, and shipping devices.
6.2.3.19.11.5.1. (Added) Use the MAJCOM's command code the aircraft is assigned to when processing engine installation in CEMS. Refer to TO 00-25-254-1, <i>Comprehensive Engine Management System Engine Configuration, Status and TCTO Reporting Procedures</i> for guidance.
6.2.3.19.11.6. (Added) Develop a memorandum of agreement (MOA) IAW AFI 25-201, <i>Support Agreements Procedures</i> , with SRANs at pre-positioned sites to manage engines, and manage tenant spare engines.
6.2.6. The senior 2R0 or civilian equivalent member is the unit functional manager and monitors and controls analysis resources for the unit. All issues relating to MIS database management, and training should be directed to the unit functional manager first. The unit functional manager will elevate issues beyond the unit control to the wing's analysis functional

manager. This includes allocations of AETC and AFMC/SSG formal school quotas.
6.2.6.14.2. (Added) Ensure a DIT exists.
6.2.6.14.3. (Added) Ensure MIS User Group meetings are held at least quarterly.
6.2.6.14.4. (Added) Set priorities and resolve conflicts on all automated maintenance systems priorities.
6.2.6.14.5. (Added) Coordinate with wing plans personnel to develop planning data and inputs.
6.2.6.14.6. (Added) Ensure timely submission of data to meet MAJCOM reporting suspense's and validity of data submissions. Work with the senior maintainers on all comments written to explain the meaning of the data presented.
6.2.6.14.7. (Added) Ensure database managers (DBMs) have the capability to support the 24-hour processing requirements for IMDS-CDB.
6.2.6.14.8. (Added) Rotate DBMs yearly to ensure all analysts are fully trained and have experience in this vital area (N/A to ARC). Training may be obtained through the local communications squadron, AETC specialized courses, MAJCOM specialized training, or contractor training.
6.2.6.15.1. (Added) MMA Team Concept. MMA teams identify problem areas for additional study using MIS data gathering, research, and investigation. Deficiency Analysis/QA assists by providing in-depth technical expertise. The MMA team will present MXG leadership with completed studies focusing on the cause and effect of problem areas, and include recommendations for course(s) of action as appropriate.
6.2.6.15.2. (Added) IMDS-CDB/G081 Users Group. Establish a IMDS-CDB/G081 Users Group to identify user problems, provide on the spot training to correct user documentation problems, and to discuss other issues relating to operation of the system. A senior maintenance leader chairs the working group. Meetings are held at least quarterly and are also conducted prior to loading an IMDS-CDB release/G081 major program change to ensure all personnel are aware of the changes. An agenda will be published and sent to all work centers prior to all meetings. A representative from the communications squadron should be invited to attend the meeting to discuss issues related to the system operations. Meeting minutes will be published and sent to all work centers.
6.2.6.16. The command maintenance data functional manager at HQ AFMC/ A4MM is responsible for all issues related to MIS. They will provide technical advice to units on problems beyond their expertise.
6.2.6.16.4.10.1. (Added) Have access to the tools required to manage the IMDS-CDB database in the host unit. DBMs must have a password with access to TIP and Demand. The password

must have access to a DA1A account for DBE/IQU.
6.2.6.16.4.10.2. (Added) The database administrator (DBA) at the DECC, or NCC will then add the users ID to a system account. The DBM will have access to programs required to manage the IMDS-CDB database in the host unit, which will include: ACOPY, SUPUR DSKUTL, EZLOAD (FAS privileges) PSPURB, STAR (read only) and UDSMON.
6.2.6.16.4.10.3. (Added) Data Base Look (DBL).
6.2.6.16.4.10.4. (Added) Console monitoring (CONS) with display option.
6.2.6.16.4.10.5. (Added) QLP report writer. Individual analysts not directly associated with database management are still required to receive training in QLP report writer, on-line inquiries, and conversational commands to obtain nonstandard data from the IMDS-CDB database to perform analysis duties. This training will be documented on an AF IMT 797, <i>Job Qualification Standard Continuation/Command JQS</i> , and included in the analysts' AF Form 623, <i>Individual Training Record Folder</i> .
6.2.6.16.4.17. (Added) Notify affected users if errors are found in the IMDS-CDB database and take prompt action to correct the errors.
6.2.6.16.4.18. (Added) Coordinate and control recovery procedures for IMDS-CDB.
6.2.6.16.4.18.1. (Added) Maintenance Automated Products (Nonstandard MIS Products). The use of computerized products from the IMDS-CDB/G081 and REMIS systems are major sources of information for maintenance data systems analysis. All MMA personnel will receive training to enable them to make maximum use of these systems. This training will be documented on an AF IMT 797, <i>Job Qualification Standard Continuation/Command JQS</i> and included in the analysts' AF Form 623.
6.2.6.16.4.18.2. (Added) Query Language Processor (QLP), Integrated Query Utility (IQU) and Structured Query Language (SQL) allow retrieval of information from IMDS-CDB database files. These utilities are intended to provide nonstandard data and report formats for specific uses and update or change data base information.
6.2.6.16.4.18.3. (Added) REMIS-TALK is a data retrieval system available to analysts for data extraction used similarly to QLP. This retrieval system is used to extract information from the REMIS system on Equipment Inventory, Multiple Status and Utilization Reporting Subsystem (EIMSURS), Product Performance Subsystem (PPS), and Generic Configuration Status and Accounting Subsystem (GCSAS) and the Debrief Subsystem.
6.2.6.16.4.18.4. (Added) FOCUS allows the retrieval of information from G081 database files. This utility is intended to be used to provide nonstandard data and report formats for specific uses.

6.2.6.16.6.7.1. (Added) Provide feedback to users via user's meetings, periodic memorandums, letters, etc.
6.2.6.17.1.1. (Added) When the operational requirements are not achieved, MMA will perform an investigation to determine the cause. As a minimum the following areas will be considered:
6.2.6.17.1.1.1. (Added) Are operational requirements realistically based on availability of equipment?
6.2.6.17.1.1.2. (Added) What are the causes for flying schedule deviations (cancellations, abortions, additions or early/ late takeoffs)?
6.2.6.17.1.1.3. (Added) Are specific aircraft, equipment, systems, or subsystems contributing to a disproportionate share of deviations/turbulence?
6.2.6.17.1.1.4. (Added) Is specific equipment failing to perform as scheduled? Does this equipment require more or less maintenance than others?
6.2.6.17.1.1.5. (Added) Are there enough people to meet mission needs? Are certain work centers documenting significant overtime or show consistently high utilization rates?
6.2.6.17.1.1.6. (Added) Is there a good balance of skills within AFSCs and between the units?
6.2.6.17.1.1.7. (Added) Do higher rates for repeat/recur discrepancies indicate training/experience shortfalls?
6.2.6.17.1.1.8. (Added) Is there sufficient time to schedule and work maintenance problems?
6.2.6.17.1.1.9. (Added) Are trends significant? Are the trends short term (6 months or less) or long term? Where will the unit likely be in 6-12 months?
6.2.6.17.1.1.10. (Added) Are there seasonal or cyclical variations? Are current variations outliers?
6.2.6.17.2. Deficiency analysts will be a 5- or 7- level and should have at least 6 months experience on the weapon system. At least one of the deficiency analysts assigned will be a SSgt, or civilian equivalent, with an aircraft maintenance background. Other skills may be included to effectively analyze specific functions of an aircraft weapon system. Deficiency analysis technicians will be rotated back to their maintenance section or flightline within 36 months to maintain AFSC proficiency. They use analytical data and their technical knowledge to identify problems, work with the customer, and help find solutions. They should not limit themselves to pointing out general areas for investigation; they should identify deficiencies applicable to a work center, particular equipment end item, maintenance practice or management action. Deficiency analysts will:

6.2.6.17.2.1. (Added) Review QA summaries for positive and negative trends.
6.2.6.17.2.2. (Added) Review debriefing data and abort information daily to assist in the identification of problem aircraft or systems.
6.2.6.17.2.3. (Added) As a minimum, perform monthly reviews of:
6.2.6.17.2.3.1. (Added) DD lists for technical errors or negative trends.
6.2.6.17.2.3.2. (Added) Repeat/recur discrepancy lists for problems.
6.2.6.17.2.3.3. (Added) High CND rates and incidents for inadequate troubleshooting or technical data problems.
6.2.6.17.2.3.4. (Added) Aircraft scheduling deviations for negative maintenance practices and trends that impact work force and workload stability.
6.2.6.17.2.4. (Added) Monitor and evaluate the maintenance portion of the base repair program and IREP.
6.2.6.17.2.5. (Added) Analyze the performance of selected systems, subsystems, and components to help determine the source of problems affecting the mission of the unit.
6.2.6.17.2.6. (Added) Attend QA and Product Improvement Working Group (PIWG) meetings and provide trend data as needed.
6.2.6.17.2.7. (Added) Deficiency analysts will not be utilized as a full time DIT monitor.
6.2.6.17.3. (Added) Consider the following questions when reviewing negative trends:
6.2.6.17.3.1. (Added) Which systems are creating a high NMC rate? Are these the normally high systems? If so, are they higher than normal? What are the high driving components, and what is being done (or could be done) to address the problems? What factors are causing an increase or decrease in the NMC hours? Are the unit's deployments affecting the rate, if so to what extent?
6.2.6.17.3.2. (Added) Are specific aircraft or equipment causing trend distortions?
6.2.6.17.3.3. (Added) What systems have high CND, repeat or recur malfunctions?
6.2.6.17.3.4. (Added) What parts or components cause NMCS conditions? Are these normal, or is a new problem emerging?
6.2.6.17.3.5. (Added) Are the items repaired on station? Are they 2LM components? Could they be repaired locally?

6.2.6.17.3.6. (Added) Is supply support sufficient and responsive? If not, why not? Are stocks adequate?
6.2.6.17.3.7. (Added) Is the lack of training, technical data, or tools and equipment affecting certain systems or AFSCs?
6.2.6.17.3.8. (Added) Has the AFGLSC been contacted?
6.2.6.17.4. (Added) Analytical Process. The analytical process consists of identifying contributory factors, manipulating raw data into meaningful formats, computing management indicators, performing statistical measurements, and creating accurate, complete, and easy to understand presentations. An analytical process uses a number of methods, (e.g., visual observation that is dependent upon the experience and knowledge of the observer; comparative analysis that may be performed statistically or visually and involves the comparison of two or more like operations or items to identify variations or differences, and statistical analysis or statistical investigation that is the methodical study of data). These methods are used to reveal facts, relationships, and differences about data and data elements and are a useful adjunct to comparative and visual analysis. Analysts should use these tools and other methods to perform analytical studies to gain insight into unit performance and to enhance process improvement.
6.2.6.17.5. (Added) Management Contributions to the Analytical Process. Maintenance managers have a significant impact on the usefulness of the MMA to the unit. Managers should constantly review how information is being organized and presented. The lack of focus regarding use of data, improper arrangement of data for analysis, or unclear presentations of results can obscure meaningful information. Managers should be familiar with how data is developed, interpreted, and presented to ensure accurate presentations of results for decision making. Special studies and analyses specifically targeted for areas of concerns to managers are valuable tools in helping units isolate factors surrounding problem areas.
6.2.6.17.5.1. (Added) Analytical Studies. MMA will provide results of investigations, analyses, or studies to work centers. The most effective study is one that goes beyond superficial conclusions. It helps solve a problem relative to mission performance. Specific studies are provided to the requester, and a file copy is retained for future reference. Disseminate the study by electronic means or include it in a monthly maintenance summary.
6.2.6.17.5.2. (Added) The study should state assumptions up front, and should be summarized to state how the significance is measured.
6.2.6.17.5.3. (Added) Although not the only format, most studies will begin with background information. The study should include the data, research, investigation, and statistical findings, along with their respective sources. Conclusions relevant to the study should be drawn from the data, research, investigation, and statistical findings. The study should include recommendations to address the conclusions relevant to the problem (other issues uncovered can be identified, but should be kept separate).

6.2.6.17.5.4. (Added) Maintenance Analysis Referrals. A referral is a procedure used to identify, investigate, and propose corrective action for management problems. These are highly effective tools to make agencies aware of common problems. Referral reports are used to start the referral procedure and document the corrective actions for implementation and future reference. Due to the amount of investigation and research needed to properly process referrals, ensure they are not used for problems that can be resolved more efficiently through verbal or less formal communications. Referrals are not determined by a quota system. They are used only when necessary to affect a permanent solution to a problem that cannot be solved by other means. Referral reports must be concise, accurate, and timely to provide maintenance managers with information for making decisions. Anyone can initiate a referral, but MMA is the OPR and assigns a referral number and maintains a log of all referrals. The log should reflect the referral number, initiating agency, date, subject, and action taken. QA will work with unit managers and work center technicians to perform investigations and recommend corrective actions. Route through the affected agencies for comments, with the final addressee as the MMA section. Retain copies and indicate whether additional monitoring or follow-up action is necessary. Provide a completed study to each MXG QA.
6.2.6.17.6. (Added) Dedicated AMU Analysis (where applicable). The AMU analysis function is intended to provide dedicated analytical support for the AMU. The Maintenance Management Analysis (MMA) section NCOIC may dedicate an analyst to each AMU. The dedicated AMU analyst works for the MMA section NCOIC. Accomplishing AMU tasks are the dedicated analyst's primary responsibility. The MMA section NCOIC is responsible for the overall effectiveness of the AMU analysis program. To improve the overall effectiveness of the dedicated analyst program, analysts should be rotated approximately every 12 months. As a minimum, the AMU analyst will:
6.2.6.17.6.1. (Added) Review maintenance debriefing data to track in-flight discrepancies and deviations on each aircraft. Review aircraft status inputs from the MOC for WUC accuracy. Closely monitor fix time on Code 3 breaks and report results to AMU supervision daily. Brief problem aircraft and systems to AMU supervision daily.
6.2.6.17.6.2. (Added) Brief comparative AMU data weekly and monthly as required by the MXG/CC.
6.2.6.17.6.3. (Added) Provide analyses as requested by AMU supervision or when identified through review of AMU performance data.
6.2.6.17.6.4. (Added) Validate CANN documentation in IMDS-CDB at least weekly, with AMU supply and inform AMU supervision of its accuracy. If errors exist, a more frequent validation may be required. Advise AMU supervision of recurring problems.
6.2.6.17.6.5. (Added) Monitor the UTE rate for the AMU.
6.2.6.17.6.6. (Added) Analyze programmed and actual attrition factors.

6.2.6.17.6.7. (Added) Attend AMU scheduling/production meetings at least once per week.
6.2.6.17.6.8. (Added) Maintenance Analysis. Present data by using summaries, charts, graphs, tabular displays, and narratives. These data presentations should show the relationships among various factors. Data presentations should be displayed or presented in time to be useful in plans or reports. A printed monthly maintenance summary, tailored to the needs of the unit, is an excellent method of presenting data.
6.4.4. Initiate/coordinate with HQ AFMC/A4M on all authorization change requests (ACR).
6.4.4.1. (Added) Coordinate and monitor permanent change of assignment (PCA) actions and suspense's of involved agencies for appropriate documentation.
6.4.11. (Added) If applicable, manage the group's logistics test and evaluation (LT&E) mission IAW AFI 99-103. The MXG/CC/CL or equivalent will determine if the LT&E flight/element should be aligned under the MOS, Programs and Resources Flight, AMXS, or stand alone squadron. If assigned, LT&E flight/element will:
6.4.11.1. (Added) Establish LT&E policy and oversee the LT&E process.
6.4.11.2. (Added) Manage development and usage of LT&E training courses.
6.4.11.3. (Added) Identify opportunities for LT&E, initiate the test process, and assign management responsibilities.
6.4.11.4. (Added) Provide test manager support to LT&E.
6.4.11.5. (Added) Manage the LT&E plan and report writing process.
6.4.11.6. (Added) Manage creation, modification, and usage of data collection tools.
6.4.11.7. (Added) Manage test data software development, installation and training.
6.4.11.8. (Added) Identify test support needed in training, facilities, SE, funding, and other logistics areas as required.
6.4.11.9. (Added) Provide long range and intermediate logistical planning and support for tests and programs.
6.4.11.10. (Added) Be responsible for ongoing test facility support to include renovations and major facility modifications.
6.4.11.11. (Added) Work with program engineers, test designers, developmental engineers, and program managers regarding plans for the test and evaluation workload.

6.4.11.12. (Added) Provide test plan annex writing. Develops planning data in coordination with the MXG squadrons and other activities to include weapon system bed down and operations plans review.
6.4.11.13. (Added) Provide guidance for statement of capability, contracts, and test directives in developing plans, task directives, and supporting mission tests.
Chapter 7 - MAINTENANCE PLANS, SCHEDULING AND DOCUMENTATION (PS&D)
7.2.1.2. The AMU PS&D will conduct document reviews and validations at least every 14 days on CANN aircraft. The documents are also reviewed before and upon completion of other major programs such as Programmed Depot Maintenance (PDM), analytical condition inspections, and special tests. The AFTO Forms 781F, <i>Aerospace Vehicle Flight Report and Maintenance Document</i> , will also be reviewed for accuracy.
7.2.1.2.1. (Added) Modular engine flying hours and manual cycles are verified with the EM section during document reviews.
7.2.1.2.2. (Added) If the aircraft has been away from home station and it has been more than 30 days since the last document review, check the documents within 7 days after return.
7.2.1.3. The AMXS will develop local procedures to review aircraft forms and MIS automated products as part of document reviews and/or validations. This process will include a review by the aircraft section/flight commander or NCOIC, then the AMU PS&D. This process will allow each level of supervision to review and maintain continuity of the process.
7.2.4.6. (Added) If ACM responsibilities are delegated to other work centers, MOF PS&D will develop a formal agreement between AFMC and the delegated work center to assign responsibilities and guidelines for updating/correcting the CAMS/IMDS database (e.g., check suspense validation records in IMDS and coordinate to ensure the appropriate work center processes their suspense's daily).
7.2.4.6.1. (Added) When assigning these responsibilities, consideration must be given to the agency performing removal and replacement actions for the configured item, (i.e., the egress shop has the responsibility for CAD/PAD items, while flightline avionics has the responsibility for tracked LRUs, etc.).
7.2.4.6.2. (Added) Additionally, this guidance establishes procedures to ensure configuration data is maintained during routine maintenance actions
7.2.4.7. (Added) All TO 00-25-107, <i>Maintenance Assistance</i> , requests must be certified at the appropriate center level and coordinated through HQ AFMC/A4MM.
7.2.6. Command-directed temporary (T-1 and T-2) modifications are similar to TCTOs; however, they are temporary, and there is no corresponding change to approved weapon system

technical data. The approved modification instruction is the authority for both modification and maintenance as long as the modification is installed. To maintain configuration control, command-directed modifications are documented in the same manner as TCTOs. QA must maintain a copy of the command T-1 and T-2 modification instructions on file until they are formally rescinded. Follow additional AFMC guidance in AFMCI 21-126, *Temporary 2 (T2) Modification of Aerospace Vehicles*.

7.2.6.1. MOF PS&D or equivalent has the overall responsibility on depot level TCTO management. MOF PS&D will coordinate with System Program Managers, Lead Commands, and AFMC/A4MM.

7.2.6.1.7.1. **(Added)** Until proper disposition is determined, MOF PS&D will record and maintain TCTO kits received for aircraft in waived status for applicable TCTOs. Consult with TCTO single managers and test program managers for proper disposition of kitted TCTOs. If unable to attain disposition of received kitted TCTOs, contact AFMC/A4MM for guidance.

7.2.6.1.8. **(Added)** MOF PS&D will manage the status reporting for command-directed assessments, modifications, and modification rescissions that require de-compliance work, as well as organizational, intermediate, and depot TCTOs. Command-directed modifications will be identified by a title, command data code, and rescission date.

7.2.6.2.2.16. **(Added)** The owning scheduling agencies will ensure all automated reports are verified and corrected IAW TO 00-20-2, *Maintenance Data Documentation*.

7.2.6.2.2.17. **(Added)** Each month, MOF PS&D, EM section, and TCTO managing agencies receive a copy of the TCTO reconciliation listing and must annotate this listing with TCTO requirements.

7.2.6.2.2.18. **(Added)** MOF PS&D monitors completion of commodity TCTOs and coordinates with performing work centers to ensure compliance within specified time limits. AMU PS&D establishes schedules for completion of installed commodity TCTOs with companion aircraft TCTOs. AMU PS&D schedules aircraft TCTOs or on-equipment munitions type TCTOs. The EM section schedules non-installed engine-related TCTOs and coordinates with AMU PS&D on installed engine related TCTOs. The munitions flight scheduler manages TCTOs for all air-launched surface attack guided missiles and associated support equipment, munitions, nuclear ordnance commodity management (NOCM) items, guidance kits, air intercept/aerial guided missiles and air intercept/aerial rockets.

7.2.6.2.4. **(Added)** TCTO Waiver Procedures. Commanders of AFMC organizations may temporarily waive compliance with routine, immediate and urgent action TCTOs (Organizational, Intermediate and Depot Level) only when TCTOs are applicable to components of a system or subsystem that are deactivated or removed from the aircraft because of RDT&E missions or compliance of the TCTO would adversely affect the test mission. Procedures are outlined in AFI 63-101, *Aircraft and Equipment Maintenance Management*.

7.2.6.2.4.1. (Added) Owning organization will initiate the waiver request for Organizational, Intermediate, and Depot Level TCTOs.
7.2.6.2.4.2. (Added) The request will include the affected TCTO number, T-2 modification number and specifically why the modification interferes with accomplishing the TCTO.
7.2.6.2.4.3. (Added) The owning organization will contact the TCTO single manager to ensure that noncompliance will not result in a safety of flight condition, and to see if there are any safeguards that should be taken until the TCTO can be complied with. Include the single manager's name and phone number on the waiver request.
7.2.6.2.4.4. (Added) Owning organization will coordinate the waiver request with the MXG/CC/CL or equivalent.
7.2.6.2.4.5. (Added) Once the request has been signed, forward a copy of the signed request to the TCTO monitor, command aircraft manager, and the TCTO single manager. Wing TCTO monitor will retain a record copy.
7.2.6.2.5. (Added) Noncompliance will be recorded on the AFTO Form 95, <i>Significant Historical Data</i> , and appropriate Maintenance Information System, as applicable IAW TO 00-20-1, <i>Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures</i> , and TO 00-5-15, <i>Air Force Time Compliance Technical Order Process</i> . The entry will indicate the reason and estimated date of compliance.
7.2.6.2.5.1. (Added) Conduct an annual review and validate all waived TCTOs using the original MXG/CC/CL or equivalent approved date or last review date.
7.2.6.2.5.2. (Added) Send a list of waived TCTOs to HQ AFMC/A4MM no later than the first workday of January and July or when a significant change to a TCTO or waiver has occurred.
7.2.7.6.1. Agencies requesting changes or updates to the need date of any cartridge actuated device/propellant actuated device (CAD/PAD) item must coordinate with AMU PS&D, MOF PS&D, and munitions accountable systems officer (MASO) in sufficient time to preclude emergency issue requests. Agencies requesting a change shall provide justification if need dates are changed by more than 30 days. No justification is necessary if changes are within 30 days, regardless of the quarter, or if the change is driven by OO-ALC. Issue requests for unforecasted or improperly forecasted items (except for replacement of inadvertently fired items or items found to be unserviceable) will be supported by a letter of justification signed by the MXG/CC/CL or designated representative.
7.2.7.11. Prepare AFTO Form 223, <i>Time Change Requirements Forecast</i> for TO 00-20-9, <i>Forecasting Replacement Requirements for Selected Calendar and Hourly Time Change Items</i> and applicable -6 TO requirements. Forward AFTO Form 223 to the MOF PS&D section. MOF PS&D will review all AMU AFTO Form 223 and will forward a combined list of requirements to the appropriate supply agency. AMU PS&D is responsible for forecasting only those selected items specifically identified in TO 00-20-9, and the aircraft -6 TO.

7.2.9.1.1. (Added) MOF PS&D personnel will:
7.2.9.1.1.1. (Added) Ensure a minimum of 6 months of engine operating time are remaining on time change items (TCI) such as modules/compressors/turbines/gearboxes and other major components at time of transfer or according to established MOA.
7.2.9.1.1.2. (Added) Ensure all engines have a complete borescope inspection accomplished unless a borescope was accomplished within the last 10 aircraft flying hours.
7.2.9.1.1.3. (Added) Verify TCIs have a minimum of 60 days or 50 hours remaining at time of transfer.
7.2.9.1.1.4. (Added) Verify all SI have at least 25 percent of the usable time remaining at time of transfer.
7.2.9.1.1.5. (Added) Include two copies of the IMDS pilot reported discrepancy (PRD) report (NFSISO screen 179) for the previous 90-day period in the aircraft records file.
7.2.9.6.1. MOF/AMU PS&D will generate two copies of the following products listed below and forward one copy of each to the gaining unit not later than (NLT) 30 days before the aircraft is scheduled to be transferred. Annotate changes in red on the remaining copy and include it with the aircraft record jacket file at time of transfer.
7.2.9.6.1.1. (Added) Automated records check (ARC).
7.2.9.6.1.2. (Added) Transfer of equipment (TRE) for aircraft and engine(s).
7.2.9.6.1.3. (Added) Significant history data (SHD) for aircraft and engine(s) CFT, W/B/T, and EFT.
7.2.9.6.1.4. (Added) AFTO Form 427, <i>Aircraft Integral Fuel Tank Repair Historical Record</i> , or AFTO Form 428, <i>B-1B Aircraft Integral Fuel Tank Repair History Record</i> .
7.2.9.7. (Added) During AGE Transfers. In addition to the inspection requirements in TO 00-20-1 and TO 35-1-4, <i>Processing And Inspection Of Support Equipment For Storage And Shipment</i> , QA may perform an assessment on each AGE item. The inspection includes a complete records check. When the capability exists, ensure all discrepancies are corrected prior to equipment transfer. Annotate in the equipment forms any discrepancy not corrected due to lack of parts.
7.2.9.8. (Added) Foreign country and/or sister service aircraft that will be flown/maintained by AFMC units will require a transfer inspection (reference T.O. 00-20-1 and 00-35D-54 Chapter 8).

7.2.9.9. (Added) Loaner aircraft from another USAF unit require a signed MOA from both the losing and the gaining MXG/CC or equivalent containing, at a minimum, the inspection requirements listed in AFI 21-101 para. 7.2.9.1 – 7.2.9.6.
7.2.9.9.1. (Added) Foreign country and/or sister service loaner aircraft require a signed MOA from both the losing and the gaining MXG/CC or equivalent containing, at a minimum, the inspection requirements listed in AFI 21-101 para. 7.2.9.1 – 7.2.9.6 or foreign country/sister service equivalent requirements.
7.2.9.10. (Added) In conjunction with MMA DBM, MOF PS&D personnel will process the aircraft transfer file from REMIS IAW AFCSM 21-576V2, <i>Generic Configuration Status Accounting System (GCSAS), Software User Manual</i> . NOTE: DBMs must process NFS6A0, screen 47 and 942, upon receipt of approved file from REMIS. This must be accomplished prior to processing IMDS-CDB program NFS3W0 (actual configuration).
7.2.9.11. (Added) MOF PS&D personnel will request approved configuration tables for B-1, B-2, F-15 and F-16 units and actual configuration tables for all other MDSs using IMDS screen 334 (IMDS-CDB units only).
7.2.9.12. (Added) Ensure maintenance performs a complete aircraft Dash 21 series TO equipment inventory IAW AFI 21-103, <i>Equipment Inventory, Status and Utilization Reporting</i> .
7.2.9.13. (Added) Complete a 100 percent egress system CAD/PAD inspection on newly assigned aircraft and upon those returning from depot/PDM where the egress system has been worked on by depot personnel with the exception of B-1 and B-2 aircraft. For these aircraft, all visible components will be inspected.
7.2.9.14. An ADR must be completed prior to first flight after inspection. AMU PS&D or equivalent will make appropriate entries in the MIS aircraft automated history for all aircraft transfers detailing the date, current operating time, location, unit, and a general synopsis of worked performed or reason for transfer.
7.2.10. AFMC will not perform aircraft acceptance inspections.
7.2.12. (Added) Status Reporting. Accomplish status reporting IAW AFI 21-103. Aircraft transfer Possession Purpose Code (PPC) “BT” may only be used within the following guidelines. These guidelines also apply for permanent aircraft transfers via PDM/modification or contract repair facility. NOTE: If the gaining organization utilizes the aircraft prior to the transfer inspection, use of “BT” status will not be authorized.
7.2.12.1. (Added) Intra-command (within AFMC) transferring aircraft may be possessed in this code no longer than 2 workdays for the losing organization (to prepare the aircraft) and no longer than 2 workdays for the gaining organization (to accept the aircraft). This code allows the organization time to prepare and complete pre-transfer inspections and actions in a non-possessed status. HQ AFMC/A4M must approve any extension.

7.2.12.2. (Added) Inter-command (into or out of AFMC) transferring aircraft may be possessed in this code no longer than 2 workdays for both accepting and preparing the aircraft. This code allows the organization time to prepare and complete pre-transfer inspections and actions in a non-possessed status. Any extension must be approved by HQ AFMC/A4M.
7.2.12.3. (Added) Aircraft going to programmed depot maintenance (PDM)/modification may be possessed in this code for no longer than 2 workdays to prepare the aircraft. Aircraft returning from PDM/modification, contract field team or depot field team maintenance units may use this PPC no longer than 2 workdays after return of the aircraft. PPC “BT” is not authorized for the sole purpose of accomplishing scheduled maintenance such as TCTO, time change items and special inspections before or after PDM/modification input. HQ AFMC/A4M must approve any extension.
7.3.2. (Added) The principal area of concern is the overall flying/ground test schedule. For mission accomplishment and improved efficiency, the following must be considered: maximize crew training on all flights, plan alternate missions when possible, ensure configurations and fuel loads are accurate, and establish launch and recovery patterns, and utilize historical attrition data.
7.4.3. Final assessments of maintenance capabilities to support the operations “first look” projections are sent to MAJCOM A3/A4.
7.5. Annual Maintenance Planning Cycle. PS&D or equivalent will perform the long-range planning function and uses MIS products such as time distribution index (TDI), planning requirements (PRA), and workable TCTO report (WTR) to determine long-range maintenance requirements. PS&D will forecast and monitor requirements for the planned fiscal year.
7.5.3. (Added) Maintenance requirements are included in long-range plans to project aircraft availability. Develop long-range maintenance plans in as much detail as possible. All maintenance requirements will be consolidated into a single long-range plan using AF Form 2401, <i>Equipment Utilization and Maintenance Schedule</i> , or computer generated form. As a minimum, the long-range plan shows the current month’s and the next 2 months’ known maintenance requirements. As a minimum, include the next due date for all calendar inspections, calendar time change items, TCTOs in workable status, PDM schedules, and at least the next 3 aircraft ISO/PE/Phase inspections. Other maintenance requirements such as engine changes, hourly requirements, acceptance/transfer inspections, training and cannibalization aircraft will be posted as they become known or planned. Add Alternate Mission Equipment (AME) inspections to the long-range plan if the aircraft is scheduled to stay in that configuration to ensure the inspections are included in the monthly and weekly schedules.
7.5.3.1. (Added) Maintenance planning includes predictable maintenance factors based on historical data and other staff inputs (e.g., flow times for maintenance, turnaround times, and parts replacement schedules).
7.5.3.2. (Added) Include all known operational events (e.g., exercises, deployments, and development tests) during maintenance planning to determine the maintenance capability to meet

operational needs.
7.6. Quarterly Maintenance and Operations Planning. The quarterly plan applies to Test Wing training missions and all known test missions.
7.6.1. Include known test and test support schedules into quarterly plan. Because alert commitments are not performed by AFMC units, include the following priority to determine which objectives to support if a lack of resources prevents meeting requirements:
7.6.1.4. (Added) Test and test support missions.
7.6.2.1. (Added) The unit's rolling 3-month maintenance plan briefed each month meets the intent of the quarterly scheduling process. The meeting may be held in conjunction with the weekly or as a separate scheduling meeting.
7.7. Monthly Maintenance and Operations Planning. Due to the nature of the test mission, a monthly schedule for publishing according to AFI 21-101 is not conducive to mission requirements: instead, a monthly plan will be created for planning purposes.
7.7.5. Known operational needs and maintenance requirements are the basis for developing the monthly flying and maintenance plans. QA scheduled inspections listed by type and quantities are included in the monthly flying and maintenance plan unless published separately by QA.
7.7.6. (Added) The monthly maintenance plan may be published separately or as an annex to the last weekly schedule of the preceding month. If published separately, distribute the plan no later than (NLT) five calendar days before the beginning of the month.
7.8.3.9.1. (Added) AF Form 2407, <i>Approval Authority</i> . All AF Form 2407 changes that add aircraft or sorties or increase the flying window require both OG and MXG commander (or designated group level representative) approval. MXG/CD or equivalent will approve changes to the final schedule and coordinated through affected AMXS Operations Officer/MX SUPT, AMU OIC/SUPT, MXS Operations Officer/MX SUPT, operations group representative, maintenance group, and wing staff agencies. (e.g. MOC, PS&D, Analysis, etc.) using an AF Form 2407. MOC will coordinate higher headquarters directed taskings that require immediate execution.
7.8.3.9.2. (Added) AFMC units are authorized to use the Edwards Scheduling System (ESS) and Center Scheduling Enterprise (CSE) in recording and coordinating changes to the weekly schedule in place of AF Form 2407. Electronic coordination is acceptable provided receipt is acknowledged and the sender enters the name of the person notified, along with date/time of notification, and logged-in accordance with requirements on the AF Form 2407.
7.8.3.9.3. (Added) Interchanges (Tail Number Swaps). Interchanges should be used to prevent reconfigurations and unnecessary expenditures of work hours when the prime aircraft is not mission-capable by its scheduled takeoff time. Every effort is made to make the aircraft interchanges at the daily maintenance scheduling meeting the day prior to the aircraft scheduled

flight and entered on the AF Form 2407. All interchanges made at the daily maintenance scheduling meeting are entered on an AF Form 2407 for audit and analysis purposes.
7.8.3.9.4. (Added) Configuration. Finalize aircraft and equipment configurations at the daily maintenance scheduling meeting and document it on an AF Form 2407. To prevent excessive expenditures of work hours, configuration changes made after the daily maintenance scheduling meeting and prior to the first crew ready time the next day, require an AF Form 2407 coordinated through the required agencies.
7.8.4. (Added) Units must effectively plan and execute operations, test and maintenance schedules. Each day, no later than 1600 local time, the OG/CC and MXG/CC/CL or their designated group representative will review the flying and maintenance schedule, agree on revisions, and coordinate with other agencies to confirm the next day's activities. Use AF Form 2407, <i>Weekly/Daily Flying Schedule Coordination</i> , or authorized automated system in coordinating the final schedule through the <i>affected</i> AMXS Operations Officer/MX SUPT, AMU OIC/SUPT, MXS Operations Officer/MX SUPT, operations group representative, maintenance group, and wing staff agencies. (i.e. MOC, PS&D, Analysis, etc.). Develop flying schedules IAW AFI 21-101.
7.8.4.1. (Added) Each unit will establish local publications for making modifications to the weekly schedule.
7.8.4.2. (Added) The MXG/CC/CL, OG/CC, and/or director(s) will approve the proposed weekly flying schedule and forward to the WG/CC for final approval. Once the weekly schedule is reviewed and signed by the OG/CC, MXG/CC and WG/CC it becomes the final planning guide for both operations and maintenance and the basis for deviation reporting. The schedule will be followed as printed or as amended by coordinated changes. MOF PS&D will publish the final weekly flying schedule.
7.8.4.3. (Added) MOF PS&D will record maintenance scheduling deviations and forward the computations to MOF maintenance analysis weekly for publication in the monthly maintenance summary.
7.8.4.4. (Added) Spare aircraft requirements are based on projected test mission needs. The following factors are used to determine spares and are not hard limits but guidelines, and as such, it is up to the AMU to actually schedule what it can support:
7.8.4.4.1. (Added) The spare requirement may be adjusted to compensate for multiple configurations and test or school syllabus constraints
7.8.4.4.2. (Added) Additional spares are authorized to support HHQ taskings and special missions (if required by the tasking).
7.9.2. Individual work centers accomplishing TCIs are responsible for changing configuration information in MIS. The performing work center supervisor and PS&D must conduct

supervisory reviews of configuration change, TCTO, SI and TCI events using MIS on-line capabilities. Unless otherwise specified in local procedures, schedulers must process IMDS screen 128 for all removal, installation, TCI, SI and TCTO compliance updates for any items installed on the aircraft. EM must process IMDS screen 128 for engines and engine components. In addition:

7.9.2.1. **(Added)** Attend TCTO planning meetings when aircraft or equipment are affected and initiate/ maintain folders for applicable TCTOs. TCTO folders will be standardized IAW MOF PS&D guidance. AMU PS&D will attend the monthly TCTO review meeting hosted by MOF PS&D.

7.9.2.2. **(Added)** Manually update MIS products as changes occur IAW procedures established by MOF PS&D.

7.9.2.3. **(Added)** Correct TCI and SI program discrepancies identified by the MOF PS&D time change monitor as soon as possible. Provide MOF PS&D with MIS products or other documentation of the corrections.

7.10.2. Coordinate all assignment/possession planning through the AFMC AVDO, (AFMC/A4M) and the AFMC Aircraft Fleet Manager (AFMC/A3F). Coordinate all assignment/possession changes also through the AFMC Aircraft Fleet Manager (AFMC/A3F)

7.10.7. Schedulers will monitor Dash 6 and associated technical orders to ensure time change/inspection frequencies align and support the maintenance concept of the weapon system. Scheduled maintenance requirements that do not align with the established maintenance concept and affect aircraft availability will be identified and forwarded to the Product Improvement Working Group (PIWG) for consideration and/or resolution.

Chapter 8 - QUALITY ASSURANCE (QA)

8.2. Responsibilities. The MXG/CC/CL or equivalent (MXG, MSG, MUMG, GHG, etc.) may assign QA additional duties such as exercise evaluation team (EET) augmentation, and the responsibility to manage group programs (e.g., security, training, etc.). While centralized control of programs such as these may be desirable and at times necessary, management of too many programs diminishes QA's ability to administer its primary functions as outlined in this chapter. Commanders should consider augmenting unit manpower document (UMD) authorized QA personnel to fulfill obligations of locally imposed programs, or assigning responsibility for these programs to other agencies.

8.2.1.7. **(Added)** Manage Self-Inspection Program.

8.2.1.8. **(Added)** AF Repair and Enhancement Program (AFREP) IAW AFI 21-123.

8.2.1.8.1. **(Added)** Air Force Repair Enhancement Program (AFREP). This program optimizes Air Force resources by increasing the wing-level repair capability of air and space parts and equipment. AFREP enables the repair of certain items if the repair of the item is cost effective

without risk to mission performance. Complete instructions for managing AFREP can be found in AFI 21-123, <i>Air Force Repair Enhancement Program</i> .
8.2.1.8.2. (Added) Wing/Group AFREP manager will be a senior noncommissioned officer (SNCO) (or civilian equivalent) having an extensive maintenance background. The AFREP manager is the central focal point for all AFREP initiatives; including circuit card repair (CCR).
8.2.10. (Added) Monitor Ground Instructional Trainer Aircraft (GITA) for safety and serviceability.
8.3.4.1. (Added) Primary/initiating work center will immediately notify QA and MOF PS&D when changes to profile JSTs occurred due to technical data change/update. Primary/initiating work center will update the MIS to reflect the change with assistance from MOF PS&D.
8.3.9.1. (Added) Review all locally designed and manufactured tool records for currency and accuracy every 2 years.
8.3.10. Verify and publish combined MXG IPI listing every 2 years.
8.3.22. (Added) Maintain an active oversight of the unit configuration management/retrofit and modification control program for all assigned aircraft and equipment as outlined in AFI 21-101 and this supplement.
8.3.23. (Added) Establish procedures to support Red Ball maintenance in conjunction with MXG/CC, MOC, AMXS, MXS (EMS and CMS) and supply in the base supplement to AFI 21-101. NOTE: Units will not develop local supplements to existing aircraft technical data beyond those authorized in TO 00-5-1.
8.3.24. (Added) Monitor oil analysis program (OAP) IAW AFI 21-124, <i>Oil Analysis Program</i> .
8.3.25. (Added) Coordinate with maintenance training flight (MTF) to establish QA review of training course graduates.
8.3.26. (Added) Serves as the OPR for writing the wing supplement to AFI 21-101 in accordance with AFI 33-360.
8.3.27. (Added) Ensures appropriate documentation is initiated for aircraft and equipment impoundments.
8.3.28. (Added) Ensure QA personnel conduct Personnel Evaluations (PE) every 24-months on any personnel who perform, supervise, inspect, evaluate, instruct, or train a logistics/maintenance task. Personnel must pass PE on task that are core competency of their job and/or task identified requiring special skills qualification (i.e. SCR or SSQ). For new personnel or personnel performing new task conduct a PE as soon as possible but no longer than 120 days from task qualification. Failed evaluations will result in a re-evaluation within 30 days.

8.3.29. (Added) QA Chief will develop a Quality Assurance Community of Practice (CoP) or SharePoint site and provide HQ AFMC/A4US full access. As a minimum the following items will be posted:
8.3.29.1. (Added) MXG IPI listing.
8.3.29.2. (Added) Key Task Listing.
8.3.29.3. (Added) Routine Inspection Listing Checklists.
8.3.29.4. (Added) MSEP and meeting minutes.
8.3.29.5. (Added) MSEP Evaluation & Inspection Plan including Surveillance Schedule.
8.3.29.6. (Added) Monthly Summary and Metrics.
8.3.29.7. (Added) Checklist applicability Matrix.
8.3.29.8. (Added) Quality Review Board Analysis.
8.3.29.9. (Added) Local Operating Instructions.
8.3.29.10. (Added) Cross-tell information/QA Flash
8.3.29.11. (Added) Organizational Charts to include complete break out of all organizations beginning with 2ltr. Organizational charts should show a breakdown to at least the (5) five letter. Include office symbol/title, name/title, and phone/building number.
8.3.29.12. (Added) Check AFMC LCAP CoP for templates and additional requirements. Deliverables must meet prescribed format when templates are provided on the AFMC LCAP CoP.
8.3.30. (Added) Determine the duties and responsibilities of inspectors.
8.3.30.1. (Added) Dedicated Inspector System. In an effort to enhance continuity and communication between QA and the squadrons, utilize the dedicated inspector system to the maximum extent possible. Inspectors from QA are aligned with individual squadrons and maintenance functions. Dedicated inspectors may continue to perform other QA duties; however, their inspection activities focus on their assigned squadron/group. Although the Dedicated Inspector System will be used, QA Chief will ensure rotation of these personnel IAW AFI 21-101, paragraph 8.8.
8.3.30.2. (Added) QA Chief will ensure inspectors evaluate the maintenance and logistics processes to ensure the right tools, equipment, technical orders, parts, requirements, etc. are on

hand and properly integrated into the overall maintenance and logistic processes.
8.3.31. (Added) As the selecting/hiring official for QA inspector/COR, QA Chief will ensure the individual is a qualified subject matter expert (SME) in the functional area (i.e., avionics, AGE, aircraft maintenance, fabrication, munitions, etc) the individual will be evaluating.
8.3.31.1. (Added) QA Chief must ensure civilian QA inspector/COR civilians have the prior maintenance experience in the functional area for which the position will be filled. The QA must include the following knowledge, skills, and abilities:
8.3.31.1.1. (Added) In-depth knowledge of missions, functions (flight line, back shop, and depot), goals, objectives, requirements, work processes, principals, policies, and procedures, and quality pertinent to Maintenance and Logistics to include test and depot aircraft, commodities, engines, equipment, munitions (conventional and nuclear), missiles, nuclear weapons related materials, and their relationship to other organizations/functions to include the Logistics Standardization and Evaluation Program (LSEP), Maintenance Standardization and Evaluation Program (MSEP), Logistics Compliance Assessment Program (LCAP), Quality Assurance, and Contract Management Oversight.
8.3.31.1.2. (Added) In-depth maintenance and logistics skills that supports the missions, functions (flight line, back shop, and depot), goals, objectives, requirements, work processes, principals, policies, and procedures, and quality pertinent to Maintenance and Logistics to include test and depot aircraft, commodities, engines, equipment, munitions (conventional and nuclear), missiles, nuclear weapons related materials, and their relationship to other organizations/functions to include the Logistics Standardization and Evaluation Program (LSEP), Maintenance Standardization and Evaluation Program (MSEP), Logistics Compliance Assessment Program (LCAP), Quality Assurance, and Contract Management Oversight.
8.3.31.1.3. (Added) Skill in planning, organizing, and developing studies or projects and to negotiate effectively with management to accept and implement recommendations, where the proposals involve substantial resources, and require extensive changes in established concepts and procedures.
8.3.31.1.4. (Added) Knowledge of applicable requirements of the Federal Acquisition Regulations relating to performance-based services
8.3.31.1.5. (Added) Skill in interpreting and applying product specifications, technical data, regulations, policy statements, and other guideline materials.
8.3.31.1.6. (Added) Skill in written and oral communications.
8.3.31.1.7. (Added) Skill in establishing effective interpersonal work relationships.
8.3.31.1.8. (Added) Ability to use office automation tools and techniques to design and generate reports, briefing materials, and/or comparable documents. Must be proficient using standard

MS Office software tools.
8.4.12.1. (Added) Review MSEP data monthly to identify high-missed items from evaluations, inspections and observations. A high-missed item is defined as any item missed at least three times during a one-month period. Coordinate with MMA to identify any relationships with repeat, recur and CND trends. Include this data in the monthly MSEP summary.
8.4.13. (Added) Annually document the evaluation of the quality of maintenance training IAW all applicable directives and TOs.
8.5.1.1. (Added) QA Inspectors/COR will conduct and document evaluations (PE, EPE), inspections, and process reviews to include as a minimum the requirements in the MSEP.
8.5.1.2. (Added) Only qualified 2W0 7 Level personnel will inspect 2W0 maintenance tasks.
8.6. Quality Assurance Training. All CORs, inspectors and evaluators (i.e., QA personnel) must be trained to the extent necessary to perform QA functions to include possessing sufficient technical knowledge to effectively perform their duties.
8.6.1.1. (Added) Training must cover specific technical and weapons systems training requirements.
8.6.1.2. (Added) Training must cover the evaluation and inspections of fundamental maintenance and logistics programs such as: tools and equipment, technical orders, material management, TMDE, forms documentation, FOD/DOP, safety and other programs found in the Routine Inspection Listing.
8.6.1.3. (Added) Training must cover the evaluation and inspections of functional area(s) (i.e. Avionics, AGE, PMEL, Munitions, etc.).
8.6.2. 1. QA inspectors (permanent and augmentee) require an annual EPE on a personnel evaluation (PE) or a quality verification inspection (QVI).
8.6.5. Ensure requirements of TO 00-25-172, <i>Ground Servicing of Aircraft and Static Grounding/Bonding</i> and AFOSHSTD 91-5, <i>Welding, Cutting and Brazing</i> , are met before inspecting or evaluating aircraft welding operations.
8.6.10. (Added) Ensure the product improvement manager (PIM) and technical order distribution office (TODO) manager are trained by the MOF PS&D/MXG PS&D on TCTO requirements.
8.6.11. (Added) Training Documentation. All QA personnel must be trained or possess sufficient technical knowledge to effectively perform their duties. Employee training will be tracked in the Educational and Training Management System (ETMS) or any other HQ AFMC/A4 approved system. QA personnel are required to meet minimum qualifications on certified task being assessed, and must meet any qualification (mandatory formal training)

requirements. The Maintenance Quality Manual or COR will identify specific technical and/or weapons systems training requirements.
8.8.1. (Added) Group QA Chief will analyze Quality Data and take measures to prevent complacency and to ensure a “fresh look” at maintenance processes and maintenance discipline in all areas and shifts of operations.
8.9. Activity Inspection Program. AFMC units with assigned Quality Assurance will establish an activity inspection program. The MXW/MXG/CC/CL must ensure the depth and detail of the activity inspection is sufficient to evaluate the management capability of the maintenance organization. This can be achieved by expanding the minimum requirements outlined herein or by adding special subject items. When conducting Activity Inspections, the team should use (but are not limited to) the appropriate AF and MAJCOM LCAP and IG inspection checklists and process improvement tools as the basis to evaluate and provide actionable feedback for unit leadership. The team should evaluate the maintenance and logistics processes to ensure the right tools, equipment, technical orders, parts, requirements, etc. are on hand and properly integrated into the overall maintenance and logistic processes. Additionally, the activity inspection team should address internal problems of the unit and those caused by other activities outside the jurisdiction of the inspected unit. The MXW/MXG QA Chief recommends adjustments to the requirements based on trends and problem areas identified by QA personnel, MAJCOM and AF IG, LCAP inspections, or audit reports. In addition to utilizing QA inspectors, subject matter experts, cross utilizing flight or section chiefs etc. can be used to conduct the Activity Inspections. The reviews are planned, coordinated, and executed by the QA Focal Point. Activity inspection intervals will not exceed 12 months.
8.9.2. The MXW/MXG/CC/CL will determine the scope of the units inspection.
8.9.2.1. (Added) The activity inspection should encompass a statistical sampling of all sections/flights of the organization being inspected and unit self inspection programs within each inspected section/flight. Whenever possible, locally required inspections conducted by outside agencies (e.g., wing safety, training, security, LRS, BE, or the fire department) should be accomplished in conjunction with the QA activity inspection. This reduces the number of disruptions to the organization being inspected and also increases the comprehensiveness of the activity inspection. However, if outside agencies accomplish a separate inspection within the activity inspection year, these can also be counted as part of the annual activity inspection.
8.9.3.1. (Added) Activity Inspection Reports. Inspectors should work with the inspected organization to assist in performing root cause analysis and developing corrective action plans for Wing wide systemic issues.
8.9.4. (Added) Follow-up Inspections. Depending upon the severity of discrepancies and the overall rating, the MXW/MXG/CC/CL will direct specific follow-up inspections. Follow-up inspections must not cause other inspections to be delayed.
8.10. Maintenance Standardization and Evaluation Program (MSEP). As AFMC OPR,

HQ AFMC/A4US will implement, manage and execute the command's QA programs.
8.10.4.1. (Added) As a minimum, QA will develop and track inspection reports until closed and compile a report highlighting all findings, problem areas and any recommended improvements and provide the report to MXW/MXG/CC.
8.10.8. In addition to Material Management, Foreign Object, Tool Control and Equipment Management the following areas must be addressed:
8.10.8.7. Include the following tasks on the KTL:
8.10.8.7.1. (Added) Major aircraft maintenance inspections (phase, periodic, transfer, acceptance, and isochronal).
8.10.8.7.2. (Added) Engine final inspection (jet engine intermediate maintenance [JEIM]).
8.10.8.7.3. (Added) Engine, after installation to aircraft.
8.10.8.7.4. (Added) Engine controls (throttle) at time of installation.
8.10.8.7.5. (Added) Anytime maintenance is performed on the variable stator vane system on GE F110-100/-129 engines (JEIM).
8.10.8.7.6. (Added) Final aircraft gun system installation prior to panel installation.
8.10.8.7.7. (Added) Final gun system inspection (in-shop).
8.10.8.7.8. (Added) Engine blade blends (All engine types).
8.10.8.7.9. (Added) Engine bay inspection.
8.10.8.7.10. (Added) A-10 white area.
8.10.8.7.11. (Added) In coordination with HQ AFMC/A4US and HQ AFMC/A4M, local QA Superintendent may add additional tasks to the KTL. QA will not remove any mandatory tasks as listed above unless properly coordinated with HQ AFMC/A4US. QA will consolidate wing inputs for the MAJCOM KTL and it will be approved by the MXW/CC/CL/CD in writing. Standardized AQLs will be developed by QA for all tasks on the MAJCOM KTL. QA will review the list at least quarterly to ensure it encompasses those maintenance actions/ functions that directly affect maintenance quality. Each affected organization will be provided a copy of the list by QA. QA will ensure units maintain this list and ensure its accuracy and compliance.
8.10.8.7.12. (Added) As a minimum in B-52 units, 2W1X1 inspector(s) will inspect 50 percent of all weapons system (Aircraft armament) carded items following each aircraft periodic inspection.

8.10.8.7.13. (Added) All KTL inspections will be documented in the MIS and aircraft 781A. If the KTL task is waived by QA, the 781A and MIS will be cleared using the QA individual's name and employee number (stamp) that waived the inspection.
8.10.8.8. AFMC RIL inspection frequency. Each applicable RIL will be evaluated per applicable units, functions, and MDS and will be included in the quarterly E&I Plan. In addition to applicable technical orders, directives, instructions, MAJCOM RIL checklists with local unit supplements will be used to conduct RIL inspections. RIL inspections may be documented as QVIs/PEs.
8.10.8.8.23. (Added) Munitions build-up.
8.10.8.8.24. (Added) Tail number bin (TNB)/facilitate other maintenance (FOM) management.
8.10.8.8.25. (Added) End-of-runway (EOR) procedures and Mode IV/radar warning receiver (RWR) checks.
8.10.8.8.26. (Added) Flight control rigging procedures and primary flight control rigging tasks as designated in aircraft MDS specific technical data.
8.10.8.8.27. (Added) TCTO accomplishment.
8.10.8.8.28. (Added) Aircraft weapons systems reconfiguration activities (installation/removal of racks, adapters, launchers, pylons, etc.).
8.10.8.8.29. (Added) Aircraft external tank reconfiguration procedures.
8.10.8.8.30. (Added) Aircraft modification program compliance and conformity.
8.10.8.8.31. (Added) Oil Analysis Program (to include sampling procedures, documentation, etc).
8.10.8.8.32. (Added) Uninstalled engine test cell operations, Auxiliary Power Units, Auxiliary Power Plants and Jet Fuel Starters.
8.10.8.8.33. (Added) Aircraft Fuel System Repair Operations (prior to tank closure, etc).
8.10.8.8.34. (Added) Aircraft pressurization/depressurization.
8.10.8.8.35. (Added) Aircraft jacking operations.
8.10.8.8.36. (Added) Aircraft engine run operations.
8.10.8.8.37. (Added) Material Management (formerly Material Control/ Parts Management.

8.10.8.8.38. (Added) Foreign Object.
8.10.8.8.39. (Added) Equipment Management.
8.10.8.8.40. (Added) Safety (Industrial & Flightline).
8.10.8.8.41. (Added) Training.
8.10.8.8.42. (Added) Engine Management.
8.10.8.8.43. (Added) Dropped Object.
8.10.8.9. AFMC Conventional Munitions Program. To ensure quality assurance of AFMC munitions activities, the unique organizational alignment and mission of AFMC units must be addressed. AFMC munitions activities will follow their group QA program (if established) or develop an instruction to institute a QA program within their areas of responsibility and coordinate through HQ AFMC/A4U and A4MW to ensure applicability and intent has been addressed. In non-group established QA programs, QA must report directly to the squadron CC/CL or higher function. The activity will use applicable paragraph in 8.10.8.9.1 thru 8.10.8.9.8. In addition, use Table 8.1 to ensure munitions, maintenance, and equipment quality and reliability.
8.10.8.9.9. (Added) The following munitions activities will perform all 19 QA items listed in paragraph 8.10.8.9. and Table 8.1: The 46 MXS (Eglin) and 412 MXS (Edwards). NOTE: Item 9 may not apply to units that do not have missiles or trailers.
Table 8.1 (Added) AFMC Conventional Munitions QA Program
Maintenance Quality General Section
1. QA Responsibilities (CC may differ from MXW; LRS, OSS, etc.)
2. Quality Assurance Inspector Responsibilities
3. Quality Assurance Training
4. Maintenance Standardization and Evaluation Program (MSEP)
5. Establish/re-validate Acceptable Quality Levels (AQL/Standards)
6. QA Data Based (approved by MAJCOM A4US)
7. Monthly MSEP Summary
8. Quarterly MSEP Meeting
9. One Time Inspections (OTI)
Munitions Quality Specific Areas
10. Accountability
11. Storage practices, security, and safety
12. Inspection
13. Materiel handling and test equipment

14. Stockpile management
15. Training programs
16. Infrastructure (LPS, grounds, and bonds)
17. TAS, CTKs, tools, and support equipment
18. Munitions assembly
19. Tactical Munitions Reporting System (TMRS)
8.10.9. Unit MSEP Evaluation and Inspection Plan (E&I Plan). QA OIC/SUPT (MXG QA Chief) will develop an E&I Plan containing areas, types and numbers of inspections and evaluations that must be conducted. for their respective MXG/SQ and will be coordinated through the appropriate MXG/SQ/CC/CL (if applicable, SQ MOO/Supt). QA will update/revise, publish and distribute a MXG/CC/CL/CD approved quarterly plan. The E&I Plan will be developed using the criteria listed below:
8.10.9.1.1. (Added) Consider historical PEs, QVIs, and other inspections data (especially any items having a pass rate of less than 80 percent); not mission capable (NMC) causes; aborts and trends; in-flight emergencies (IFE) and trends; high component or system failure rates; repeat/recurring/CND discrepancies trends; Deficiency Report (DR)/ Service Report (SR) trends; suspected training deficiencies; technical data violations (TDVs), detected safety violations (DSVs), and tasks outlined in aircraft -6 TOs.
8.10.9.4. (Added) E&I Plan will be organized in sections communicating specific types of quality processes/procedures required (Identifies specific detailed quality processes and procedures relative to a particular Wing/Group/Squadron), defines specific roles and responsibilities per Wing/Group/Squadron (what shall be accomplished, by whom, when, how, and what documents are used and how they are controlled), and how those quality processes are implemented: Requirements, Processes to include Documentation Process, Evaluations, Inspections, and QA Surveillance Plan (QASP).
8.10.9.4.1. (Added) QA Chief will review the E&I Plan for compliance to this supplement, at least quarterly or when major changes, updates, or revisions are made. This plan meets the requirements of AFMCI 63-501, <i>AFMC Quality Assurance</i> , for production maintenance CORs.
8.10.9.4.2. (Added) Identify the assessment type (i.e., task, specific item, procedure or process) and minimum number (determined by the documented methodology (e.g. ANSI- Z1.4 2003) or rationale used in the program administration section of the E&I Plan) of Personnel Evaluations (PE), Quality Verification Inspections (QVI), and Routine Inspection List (RIL) and assessment areas to be conducted monthly.
8.10.9.4.3. (Added) Identify by name, Personnel Evaluations (PE), Evaluator Proficiency Evaluations (EPE) due during the month the E&I plan is published and conduct these evaluations on core/special skills qualified tasks. Any evaluations not conducted during the month scheduled will be carried forward to the next month, can only be carried forward one month total and requires Group/SQ CC approval. Additionally, an explanation/justification for not completing the evaluation is required and will be included in the monthly summary and monthly briefing.

8.10.9.4.4. (Added) Assessment Areas. For the purpose of planning and conducting assessments, major workloads will be broken down into assessment areas and documented in the E&I Plan (Program Administration and Surveillance Schedule), as applicable. Assessment areas are defined as segments or portions of a workload, system, component, process, procedure, or subject matter that is investigated, inspected, evaluated or audited.
8.10.9.4.5. (Added) Methods for inspecting, evaluating, and rating technician proficiency, equipment condition etc.
8.10.9.4.6. (Added) Key Task Listing (KTL)/"Q" Coded items.
8.10.9.4.7. (Added) Routine Inspection List (RIL) requirements.
8.10.9.4.8. (Added) Identify type and frequency of reports required by Wing QA office.
8.10.9.4.9. (Added) Define the process for control, routing and follow-up of the AFMC Form 77, <i>Request for Quality Assistance</i> .
8.10.9.4.10. (Added) Define the corrective action and preventive action process to be accomplished by production units. Care should be taken to determine root causes of deficiencies rather than simply treating symptoms. The process will, as a minimum:
8.10.9.4.10.1. (Added) Include analysis of the defects and actions taken.
8.10.9.4.10.2. (Added) Include methods used by QA offices to communicate and cross-feed information to other groups and wings.
8.10.9.4.10.3. (Added) Include methods used for QA to follow-up on corrective action taken by unit, preventive action, or process changes made to prevent recurrence or new occurrences of similar non-conformances.
8.10.9.4.11. (Added) Establish standards for Discrepancies/Quality Assessment Results (QAR) ratings.
8.10.9.4.12. (Added) Define local process for documenting deficiencies, corrective/ preventive action, and follow-up data into MIS/Quality Information Management Standard System (QIMSS).
8.10.9.4.13. (Added) Define requirements to analyze quality deficiency and acceptance inspection reports and recommend appropriate corrective and preventive action to production divisions.
8.10.9.4.14. (Added) Data collected, type of analysis done, reports to be accomplished and review level as a minimum.

8.10.9.4.15. (Added) Develop a QA Surveillance Schedule/Plan (QASP) by unit and evaluators.
8.10.9.4.16. (Added) Procedures to determine Acceptable Quality Levels (AQL).
8.10.9.4.17. (Added) Acceptable Quality Levels (AQL)/Standards. A standard is the acceptable quality level (number of minor defects) that can be considered satisfactory as a process average or conforming to established criteria.
8.10.9.4.17.1. (Added) An AQL/standard denotes the maximum allowable number of minor findings for any assessment. It must be strict enough that the task, process, or product meets an acceptable level of quality, but is not so strict that a CAT I/QAR-1 rating is unattainable. The AQL/standard is derived from QA performance-based data. MXW/MXG QA will develop procedures for determining minimum AQL/standard levels delineating an “attainable” quality level. These levels will comprise the AQL standards for all assessment types.
8.10.9.4.17.2. (Added) Failure to meet an AQL/standard results in the assessment being rated as a CAT I/CAT II MAJOR/QAR-3 failure. An identified major finding would also result in an assessment being rated as a QAR-3.
8.10.9.4.18. (Added) The unit MSEP E&I Plan implemented at the MXG level with sections dedicated for each squadron.
8.10.9.4.19. (Added) The E&I Plan will be developed and reviewed monthly and updated quarterly.
8.10.10.2.1. (Added) The QA E&I Plan will define “readily detectable” for CAT II discrepancies.
8.10.11.2. CAT II minors shall be documented for trends, and will be counted against the AQL.
8.10.13.3.1. (Added) UCR. An unsatisfactory condition is defined as an event/discrepancy that requires immediate supervisory intervention to ensure safety or process/product fit, form or function reliability. Unsatisfactory conditions are deemed major and will be documented as a UCR. A condition of a minor nature shall be documented against the applicable checklist or its regulatory guidance.
8.10.14. Personnel Evaluations (PE). A PE is a direct evaluation on task qualified personnel (Note: Personnel evaluations for industrial services and non-critical support personnel is optional at local discretion). QA will provide inspection notification IAW the applicable labor agreement. QA will determine what task will be evaluated. The PE will be on work in-progress or work about to begin. Use PEs to evaluate job proficiency, degree of training, and compliance with technical data. PEs will be used to evaluate newly certified personnel/teams, process changes to include the new processes and procedures and equipment changes. Individuals performing or certifying PAC maintenance tasks are subject to a PE. Rate PEs “pass” or “fail”

based on established AQLs/standards. Document the PE on AF Form 2419, *Routing and Review of Quality Control Report*, MIS, or in the MAJCOM-approved database. Ensure personnel performing maintenance on aircraft/equipment pass a PE every 24 months. Failed evaluations will result in a re-evaluation within 30 days of recertification of failed task. Supervisors will notify QA when recertification is accomplished.

8.10.14.1. The PE will include an evaluation of the individual's training records, tool box, TMDE and TO. General maintenance practices that relate directly to the task being performed (e.g., safety, material handling, use of tools and equipment, Foreign Object Damage prevention, Electrostatic Discharge prevention, and workmanship) will be examined during the PE. Other maintenance practices may also be examined as locally determined.

8.10.14.1.2.1. **(Added)** The team task is rated as an overall pass or fail. Team evaluations will be scored the same as PEs. During team evaluations, errors committed by team member(s) and not detected by team chief may also be attributed to the team chief.

8.10.14.2. Individuals or team members will be decertified (on the evaluated task) by their supervisor for a failed PE rating in accordance with applicable training regulations.

8.10.20. The MXW/GP/unit must conduct quarterly meetings to review the visual information, graphs, narratives, quality trends identified through inspections and evaluations, discussion of common problem areas and descriptions of successful programs or initiatives in the monthly summary per paragraph 8.10.19 above. Meeting minutes to include slide presentation with corrective actions plans and will be posted on the QA Community of Practice (CoP).

8.11. Lead Command-approved QA database. If unit developed databases that include the minimum data field requirements listed in paragraph 8.11.1. thru 8.11.14., then the unit will forward a copy to HQ AFMC/A4US for review and approval.

8.12.2.1. Deficiency reporting also includes quality, material, software, warranty and service reports (SR), exhibit processing, and inputs for R&M working groups.

8.12.2.4. At the heart of the R&M effort are many improvement programs such as PIP, IDEA, productivity, reliability, availability, maintainability (PRAM) program, and PIWGs. The PIM is an integral part of the information gathering and education process of PIWGs. This is accomplished by emphasizing and promoting the PIP through to maintenance technicians and supervisors during visits to work centers. To enhance R&M, the PIM will:

8.12.2.4.8. **(Added)** Report unit factors contributing to a deficiency to the appropriate local agency or supervisor for resolution.

8.12.2.4.9. **(Added)** Identify potential PIWG items by the letter P on the DR logs.

8.12.2.4.10. **(Added)** Attend PIWGs, or provide adequate background on PIWG issues to AFMC functional managers to allow for quality representation.

8.12.2.4.11. (Added) Evaluate the overall unit configuration management program by reviewing technical, managerial, and documentation aspects of the program and reporting any deficiencies to appropriate local manager or as directed in TO 00-5-15, <i>Air Force Time Compliance Technical Order Process</i> , and AFMC instructions. Immediate action, urgent action, and safety TCTOs require particular attention and emphasis.
8.12.2.4.12. (Added) Monitor and document initial compliance on TCTOs and determine depth and frequency of inspection coverage. Coverage is directly related to the complexity of the TCTO as well as to how critical the system or the component is to be modified.
8.12.2.4.13. (Added) Support verification, validation and TCTO kit proofing, OTIs and command-directed modifications.
8.12.2.4.14. (Added) Along with the TCTO monitor, attend all TCTO planning and reconciliation meetings.
8.12.2.4.15. (Added) Ensure all test aircraft that do not meet TCTO applicability criteria due to installed modifications are identified and tracked in a comprehensive database system. This non-applicability list will reference the waiver of compliance signed by the MXG/CC.
8.12.2.4.16. (Added) Coordinate with the MOF PS&D and the combined flight test (CFT) modification manager (when necessary), the PIM will ensure all aircraft that are de-modified have a conformity check (de-mod reconciliation) complied with to ensure aircraft TCTOs are reinstated (As applicable).
8.13. Configuration Management (CM) and Modification Management. Configuration management includes formulating and submitting modification proposals, and tracking unit concerns being worked by depots and/or contractors. A modification proposal is a recommendation to change the operation, use, or appearance of Air Force equipment (Also known as form, fit, and function). A requirement IAW AFI 10-601, <i>Operation Capability Requirements Development</i> , is necessary to start the process to modify Air Force Equipment, and modifications a completed AF Form 1067, <i>Modification Proposal</i> , can act as a requirement. If a requirement does not already exist, submit proposed modifications on an AF Form 1067. After approval by the appropriate Configuration Review Board (CRB), mail or fax the proposal to the HQ AFMC/A4M functional area manager for information purposes and to the equipment Single Manager (SM) for Configuration Control Board (CCB) approval and review. In no case modify any Air Force equipment without a TCTO or CCB directive. Specific modification configuration control authority unique to AFMC test centers will be defined in the base supplement to AFI 21-101 for AGE and other Support equipment, and in Test Wing Operating Instructions that execute the requirements of AFMC Instruction 21-126, Temporary 2 (T2) Modification of Aerospace Vehicles, for Temporary (T-2) modifications of aerospace vehicles.
8.13.2.1. (Added) Command-directed temporary (T-1 and T-2) modifications are similar to TCTOs; however, they are temporary, and there is no corresponding change to approved weapon system technical data. The approved modification instruction is the authority for both

modification and maintenance as long as the modification is installed. To maintain configuration control, command-directed modifications are documented in the same manner as TCTOs. QA must maintain a copy of the command T-1 and T-2 modification instructions on file until they are formally rescinded. Follow additional AFMC guidance in AFMCI 21-126, *Temporary 2 (T2) Modification of Aerospace Vehicles*.

8.14.1.3.1. **(Added)** Send two copies to base supply materiel storage and distribution flight inspection section with a cover letter requesting the number of TCTO affected items in supply. Base supply endorses the cover letter, returns it to the PIM and provides a copy to MOF. The PIM will provide copies of each TCTO received to the MOF/PS&D function. Send a copy of MSE TCTOs to munitions flight. The PIM develops the suspense for each cover letter.

8.14.1.3.2. **(Added)** Send a copy of TCTOs for munitions or missiles to the munitions flight and munitions operations upon receipt. If parts are required from base supply or components stocked by base supply are affected, send one copy to base supply and one copy to materiel control, maintenance supply liaison (MSL), or aircraft support flight section. Do not furnish the 11N series TCTOs to base supply, materiel control, or MSL.

8.14.1.5.1. **(Added)** Monitor the TODA and its sub functions including the central TO file, LCL, LWC, and local job guide (LJG) program, computer program identification numbering (CPIN), pack-up data IAW TO 00-5-1, *Air Force TO System*, and timely notification of priority technical data to the appropriate group or squadron supervisors.

8.16.2.7. **(Added)** Ensure standard FCF profile and associated procedures are established for each type of assigned aircraft. In addition, when a full FCF profile is not required, a tailored profile is developed by eliminating procedures from the standard profile not required to verify functional ability of the system causing the FCF.

8.16.2.8. **(Added)** The aircraft -6 TO does not normally require an FCF for a single engine change on a two engine aircraft. However, FCFs are required for an extended over-the-water flight (i.e., overseas deployment). This requirement applies to engines received from the propulsion flight or depot with no aircraft operating time since major maintenance. This does not apply to engines obtained from donor aircraft (i.e., CANN) with established aircraft operating time.

8.16.3.6. **(Added)** The following are FCF program manager responsibilities:

8.16.3.6.1. **(Added)** Ensure coordination with the appropriate squadron for an FCF pilot/aircrew and provide squadron operations with the following information: aircraft tail number, reason for the FCF, and anticipated takeoff time.

8.16.3.6.1.1. **(Added)** Local FCF procedures will include:

8.16.3.6.1.1.1. **(Added)** Debriefing procedures.

8.16.3.6.1.1.2. **(Added)** Include maintenance actions performed on transient aircraft, to include

step by step guidance for accomplishment of FCFs.
8.16.3.6.1.1.3. (Added) Procedures for accomplishing FCFs while away from home station.
8.16.3.6.2. (Added) Maintain an information file for briefing air crews. As a minimum, this file must contain unit directives concerning FCF procedures, authorization lists for FCF crews, and FCF checklist for each type of assigned aircraft. Information file will also include:
8.16.3.6.2.1. (Added) Mission profile for each type of assigned aircraft, consisting of checks to be accomplished, presented in consecutive order.
8.16.3.6.2.2. (Added) TO 1-1-300, <i>Acceptance/Functional Check Flight And Maintenance Operational Checks</i> .
8.16.3.6.2.3. (Added) Map of local FCF area or route of flight.
8.16.3.6.2.4. (Added) List of authorized FCF crew members signed by the OG/CC. Retain certification letters on file for a minimum of one year.
8.16.3.6.2.5. (Added) Review the log monthly for trends indicating problems requiring further analysis or corrective actions. Identify deficient areas and forward to the MXW/CC/CL/CD and OG/CC for required review or action.
8.16.3.6.3. (Added) FCF checklist must be used for each FCF. QA must debrief all FCFs with the appropriate debrief function. During debriefing, the FCF checklist and aircraft forms must be reviewed to determine if all requirements have been accomplished. Each discrepancy discovered during the FCF must be documented on AFTO Form 781A. After completing the review, the checklist must be sent to PS&D for inclusion in the aircraft jacket file.
8.16.3.6.4. (Added) Maintain a copy of the AF Form 2400 or automated product for deficiency and trend analysis.
8.16.7.1. (Added) While performing an FCF away from home station, the applicable requirements for FCFs of the transient/host base must be followed. The transient/host base QA office must be contacted and should be the focal point for all FCF requirements.
8.19.1.1. The weight and balance authority is the MXG/CC or equivalent.
8.19.1.8. Weight and balance handbook storage and physical location will be determined by MXG/CC or equivalent and must be standardized for like MDS.
8.20.1.1. (Added) Notify MAJCOM functional managers when local chafing OTIs are implemented.
Chapter 9 - IMPOUNDMENT PROCEDURES

9.5.2. **(Added)** QA, or equivalent function, acts as the OPR for group impoundment procedures. QA will evaluate the need for development of a local operating instruction to include, local procedures for impoundment situations, decision process, off-station aircraft impoundment, home station notification, release officials, forms entries, appointment and responsibilities of impoundment investigating officials, special handling or tagging of parts from impounded items sent through the repair cycle and conducting impoundment investigations across organizations.

Chapter 10 - TOOL AND EQUIPMENT MANAGEMENT

10.2.1.1. Include standardized procedures for clecocs.

10.2.1.3 Warranty/Quality Tool Program. The purpose of the warranty/quality tool program is to ensure high quality; industrial-strength warranted tools are available for use in aircraft and equipment activities. Warranty tools will be purchased using the Government Purchase Card (GPC) or through local contracts with a warranty tool vendor. Units desiring to establish a warranty tool program must coordinate their program through both the supply and contracting squadrons. Detailed management procedures are contained in AFMAN 23-110, *USAF Supply Manual*. The following general guidelines apply:

10.2.1.3.1. **(Added)** Specify desired replacement tool requirements.

10.2.1.3.2. **(Added)** Replacement tool delivery time.

10.2.1.3.3. **(Added)** Etching of replacement tools.

10.2.1.3.4. **(Added)** Office responsible for maintaining replacement tools (if applicable) and number of tools stocked.

10.2.1.3.5. **(Added)** Direct contact with vendor to replace tools.

10.2.1.3.6. **(Added)** When preparing background information for base contracting, provide as much information as possible on desired strength, finish (chrome or industrial), insulation, physical dimensions, magnetic properties, laser etching, and size of letters.

10.2.1.3.7. **(Added)** The contract should include procedures for replacement of lost tools and lost tool procedures. Procedures shall be accomplished IAW this instruction and unit publications.

10.2.1.5. Include equipment/equipment kits (e.g. borescope, rig pin kits, testers).

10.2.1.6.1. **(Added)** Procedures for aircraft that have already taxied or are flying when tools, equipment, technical orders (TO), or any object is lost and was used on the aircraft.

10.2.1.6.2. **(Added)** Procedures for lost tools on the aircraft during maintenance.

10.2.1.8. At a minimum, these markings will identify the individual.
10.2.1.9.1. If paper product is used, control procedures for their use will be identified in local instructions.
10.2.1.18. (Added) Procedures for long term tool kit (CTK) storage.
10.2.1.19. (Added) Procedures for control of TMDE issued/dispatched in work areas.
10.2.1.20. (Added) Procedures for control of shop machine accessories/attachments.
10.2.1.21. (Added) Procedures for control of tooling included in TCTO/Mod Kits.
10.2.1.22. (Added) Procedures for loaned tools to include issue, tracking, duration, and verification.
10.2.1.23. (Added) Procedures for training personnel on tool control and accountability measures.
10.3.2. Consider deployment taskings, Temporary duty (TDY), and special test project requirements when making CTK determinations. Insure user input is considered when determining quantity, content and layout of tool kits.
10.3.3.1. (Added) If a tool is to be permanently removed from a CTK/TK ensure any previously assigned World Wide Identification (WWID) markings are de-etched.
10.3.6. Tools will be described on the MIL to accurately depict the actual size or type to ensure positive tool control, i.e. screwdriver, common, 6 inches; socket, 3/8 drive X 5/8. Flight/section chiefs or equivalent will ensure MIL is updated, approved and signed at least annually.
NOTE: Flight commanders/flight chiefs or equivalent must review and sign the MIL. For weapons load crew CTKs, the WWM will approve and sign the MIL. A copy of the MIL will also remain in each CTK/equipment kit at all times for inventory purposes.
10.3.6.5.1. If not using the MIL or TAS to document missing/removed tools then use AFMC IMT Form 61, <i>Missing/Removed Tools and Equipment</i> , to annotate missing/removed tools.
10.3.10. MXG/CC (MXW/CC or equivalent functional authority for maintenance) will determine marking requirements. At a minimum, these markings will identify the individual.
10.3.13. (Added) Tool Replacement Procedures. A stock of spare tools is authorized to replace broken, worn, or missing tools to prevent unnecessary work delays. Spare and consumable tools are highly pilferable and pose an increased fraud, waste, and abuse potential. MXG/CC (MXW/CC or equivalent functional authority for maintenance) will establish strict controls to

include the following:
10.3.13.1. (Added) Inventory and document all replacement tools quarterly.
10.3.13.2. (Added) Replacement tools will not be issued without receipt of the unserviceable tool or documentation indicating the tool is lost and reported.
10.3.13.3. (Added) Replacement tools must be marked with the CTK WWID prior to issue.
10.3.13.4. (Added) If previously issued serviceable tools are to be used as replacement tools, completely de-etch any prior assigned markings before placing in spare tools storage.
10.4.1. Contractors and MEOs are required to use a system of their choice as long as it complies with the intent of the program.
10.4.1.2. If an automated system is not available, units may use AFMC Form 62, <i>CTK Inventory and Control Log</i> , to sign in and out CTKs/TKs and use AFMC Form 61, <i>Missing/Removed Tools and Equipment</i> , to document Missing/Removed tools.
10.4.2. If an automated system is not available, units may use AFMC IMT 62 or computer generated equivalent to document separate shift inventories.
10.4.2.1. Include all tools, non CA/CRL and CA/CRL equipment and equipment kits.
10.4.2.1.1. (Added) Local publications will specify inventory procedures (e.g. frequency, responsibilities, breaks, lunch time, when an individual leaves, CTK used by more than one person, etc.). The intent is to be able to identify the point at which a lost item would most effectively be located.
10.4.2.1.2. (Added) Supervisors are responsible for tool and equipment accountability and control. When a person removes a tool or piece of equipment, they are responsible for that item until it is returned. Local publications will provide procedure for accountability when items are removed. Supervisors will be responsible to initiate lost tool procedures.
10.5.1.3. Do not need to de-etch tool part numbers.
10.5.4. Do not create a new EID for TMDE assets. Utilize the existing bar code number on the AFTO Form 65/66 attached by PMEL. Annotate the existing TMDE bar code numbers on the MIL.
10.8.1.5. Initiate AFMC Form 310, <i>Lost/Found Item Report</i> , if the item is not found within two hours of search. Maintain reports in QA section for two years.
Chapter 11 - MAINTENANCE SUPPLY SUPPORT

11.19.5. (Added) Efforts should be made to purchase items in-lieu of local manufacture if practical when the item has been specifically designed and manufactured for the intended use/purpose.
11.37. (Added) General. Units will develop local procedures governing control of parts for Contractor Logistic Support (CLS) aircraft and aircraft not supported by MIS.
Chapter 12 - WING WEAPONS MANAGER AND WEAPONS STANDARDIZATION
12.1.2. When using civilian/contractor support, they will follow guidelines prescribed in their assigned duty sections of the applicable AFI, AFI 21-101 Chapter 18 , and PWS.
12.1.6. When TTML minimum load crew certification numbers are not met for 30 consecutive days, updates and projected resolution date will be sent to AFMC/A4MW every 30 days until TTML minimums are met.
12.1.23. 9405 report will include all suspension equipment currently T-2 modified, to include original modification date, modification number and anticipated demodification date.
12.2. Weapons Standardization. When multiple LSCs (not to exceed one per MDS) are assigned, a lead LSC will be identified to perform semi-annual evaluations and ensure standardization of loading. Applicable procedures in this section will be adopted for use by test and evaluation load crews assigned to geographically separated units.
12.2.2.5. Forecast annually for training munitions. Test directives are used as the allowance documents for establishing requirements for non-nuclear load crew training munitions (except missiles) and other related non-explosive items. The basis of issue is determined locally and will be sufficient to support uninterrupted training.
12.12.2. WWM, Weapons Flt Chief, or LSC will decertify and disqualify individual load crew members if they:
12.15. Load Crew Semi-Annual Evaluations. In test wings with no Primary Munitions listed on their TTML, the LSC will use a Limited Use Munitions specific to Test Wings to satisfy semi-annual evaluations.
Chapter 13 - MOBILITY AIRCRAFT DEFENSIVE SYSTEMS LOADING POLICY
13.2.2.1. At least two WTQC members are required to conduct practical training.
NOTE: The MXG/CC (or AMS/CC at en route locations) may grant approval for one person to serve as WTQC for the purpose of providing practical training and qualification on a case-by-case basis.
Chapter 14 - ADDITIONAL MAINTENANCE REQUIREMENTS AND PROGRAMS

DEV 14.1.1.3. ABDR support shall be accomplished IAW AFI 61-101, <i>Scientific/Research and Development Applied Technology Council</i> and AFI 63-101, <i>Acquisition and Sustainment Life Cycle Management</i> .
DEV 14.1.1.3.1. Not applicable.
DEV 14.1.1.3.2. Not applicable.
DEV 14.1.1.3.3. Not applicable.
DEV 14.1.1.3.4. Not applicable.
DEV 14.1.1.3.5. Not applicable.
14.1.2. (Added) The ABDR team chief is principal advisor to the supported commander on ABDR. The team chief will report to MXG/CC/CL or equivalent upon arrival.
14.4.1. All units will have an installed and uninstalled aircraft/engine intake/inlet/exhaust training program. This includes UAV and propeller-driven aircraft/helicopters. (Exception: reciprocating engines.)
14.4.4. MXG/CC/CL or equivalent will determine minimum number of certifiers based on mission requirement. Initial certification will take place within 30 days of completion of formal training.
14.4.4.1. Personnel decertified for cause will attend the engine inlet inspection course and be recertified by a certifying official.
14.6.1. The OPR for AFMC is AFMC/A4MM.
14.7.2.3. (Added) AGE personnel will purify AGE equipment only. Hydraulic systems and test stands will be purified by hydraulic support personnel.
14.8.10.1. The MXG/CC/CL or designated representative will coordinate CANNs in this instance through HQ AFMC/A4RE.
14.8.10.1.1. (Added) CANN process applies to NSOs for items related to research, engineering and flight test when the individual component may return to a flight/test vehicle or reinstatement onto the supply/spares system. Unique high cost items will not be CANNed without approval of the AFMC single manager.
14.10.5.8.6.1. (Added) Carry out custodial and storage responsibilities for special purpose equipment specifically assigned to the crash recovery mission.
14.10.5.8.9.1. (Added) CDDAR exercises will consist of lifting device positioning, sling

hookup, and simulating hoisting or lifting. Accomplish hoisting or lifting IAW applicable aircraft TO. During hoisting or lifting exercises, observe surface wind limitations. NOTE: When using a crash crane, the unit will accomplish removal procedures up through attaching the lifting sling to the aircraft and applying tension to the cables. When ground instructional trainer aircraft (GITA) or aircraft battle damage repair (ABDR) aircraft is used, the aircraft should be lifted.
14.10.5.8.11. (Added) Coordinate recovery actions with the appropriate contractor(s) and weapons system expert(s) as needed.
14.11. Dropped Object Prevention (DOP) Program. Dropped objects will also include unintentional/inadvertent dropped tow equipment, tow targets, drones, and missile, rocket, or aerospace platform hardware, etc., and will be reported regardless of reason for release/drop, as a dropped object to the Command FOD/DOP Manager. The intentional release of tow targets, drones, etc., when the reason for release is the malfunction of equipment, are not considered a dropped object and will be reported IAW AFI 91-204. Any object dislodged by a FO [e.g., an in-flight refueling (IFR) boom or a bird] is not considered a dropped object. Preventable dropped objects are defined as any item which was lost due to negligence during inspection or improper installation.
14.11.1.1. HQ AFMC/A4M will act as OPR for all Command dropped object field inquiries. The wing or equivalent FOD monitor will be designated as the wing DOP monitor aligned under the WG/CV. The MXG/CC/CL or equivalent, will ensure all flight crews and assigned maintenance personnel are briefed on the DOP on a recurring basis, at least annually. Aircrew members should receive these briefings as part of regular aircrew meetings to maximize aircrew awareness. Maintenance personnel should receive these briefings as part of squadron commanders' calls, unit roll calls, or other appropriate formation to maximize personnel awareness. Civilian and contractor personnel will also attend these briefings whenever possible.
14.11.1.2. Training. Annotate DOP training in appropriate training records or in MIS. Training should include, but is not limited to, inspection, installation, removal, and repair procedures for aircraft panels, doors, access covers, cowlings, etc. Also, include training on the care of panel latches, fasteners, nut plates, and other locking devices. Security of hardware, particularly those causing a high incidence of dropped objects, will be high interest items on aircrew walk-around.
14.11.1.5.4. (Added) Quarterly. The wing DOP monitor will report to the wing MMA section all dropped objects, to include MDS, date of incident, nomenclature (NOUN), national stock number (NSN), cost, specific cause, and any action(s) taken to prevent reoccurrence. This information will be reported the third month of each quarter (e.g., Oct, Nov, and Dec data will be reported in Jan report) using the monthly aircraft logistics indicators report. Summary of this data will be briefed in conjunction with quarterly FOD meeting.
14.13.1. MXG/CC/CL/CD or equivalent or designated representative will publish a LCL for assigned and operated aircraft when aircraft specific EOR checklist is not available or aircraft is modified.

14.13.5. If local requirements or special aircraft modifications dictate, publish additional guidance to TOs for EOR inspections IAW TO 00-20-1, <i>Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures</i> and TO 00-5-1, <i>AF Technical Order System</i> .
14.14.4.1.1. (Added) Initial engine blade blending certification.
14.14.5. MXG/CC/CL or designated representative will determine the number of certifiers per engine TMS to ensure standardized training and certification.
14.14.8.3. The EM section will also document CEMS IAW 00-25-254-1/2.
14.15.1.3. (Added) The MTF will review approved engine run certification procedures annually for accuracy.
14.15.1.4. (Added) Units will develop local procedures clearly depicting authorized run locations.
14.15.2.9. (Added) Be authorized to clear Red-X inspections for engine intakes/ exhausts.
14.15.5.3. Individuals are task evaluated by an authorized certifying official (An individual other than the instructor who administered the course) and after successful completion placed on the SCR.
14.15.8. To maintain proficiency, maintenance personnel authorized to operate engine will perform at least one engine run every 90 days.
14.15.9. AFMC aircraft will be taxied by rated pilots only.
14.15.11.8. (Added) Personnel must acquire at least 6 months experience on the MDS.
14.15.13. To maintain proficiency, maintenance personnel authorized to operate engines and APU/GTC/APP will perform at least one engine/APU/GTC/APP run every 180 days.
14.15.13.1. Upon certification, personnel will be placed and tracked on the SCR by MDS, Type, Make, Series, Modification (TMSM), and authorized engine power settings.
14.15.13.3. (Added) Individuals authorized to operate the trim box will perform at least one trim utilizing the trim box, every 180 days.
14.15.15.1. Certified contractor personnel may be authorized to run uninstalled engines and/or small gas turbine engines when designated in writing by the respective MXG/CC/CL or equivalent.
14.15.15.1.4. (Added) Qualifications will remain valid for 12 months unless disqualified for

cause.
14.15.15.6. All uninstalled engine/small gas turbine engine run certified individuals and certifiers will run at least one engine every 180 days. When not feasible to run every 180 days, individuals will complete part I and part II tests to maintain proficiency.
14.15.16.2.3. (Added) Notification procedures in the event of a Halon discharge will include HQ AFMC/A4M.
14.15.16.4. Certification will be tracked in MIS and SCR.
14.15.18. (Added) Special Test Projects. Some AFMC units will participate in special testing of uninstalled engines and/or small gas turbine engines that do not fall within the scope of the normal certification processes outlined in this chapter. Under these circumstances, the affected unit will apply the following guidelines to ensure test project engines are operated to the safest extent possible:
14.15.18.1. (Added) Ensure engine operations on test projects that do not have approved Air Force TO procedures have written operating procedures including emergency procedures and will be approved by the MXG/CC/CL or equivalent and appropriate safety agencies.
14.15.18.2. (Added) When engine operating procedures do not exist in Air Force TOs, test project plans will specify use of commercial engine operating manuals (if they exist) and appoint a contractor or USAF test engineer for the duration of engine testing.
14.17.3. Course material/instruction will include high interest borescope inspections (e.g. blade tip curl HS3 inspection on the F100-series engine).
14.17.4. Includes civilian equivalents. MXG/CC/CL or designated representative will determine the number of certifiers based on mission requirements. For task certification, technicians will demonstrate proper care and handling, as well as ability to perform any high interest borescope inspections (e.g. blade tip curl HS3 inspection on the F100-series engine), when applicable.
14.17.5. Document civilian training records, as required.
14.17.7.1. Proficiency for non-TO, event driven inspections is 180 days.
14.17.8. A QA personnel evaluation (PE) may be used to satisfy this requirement if the QA evaluator is a certifying official. Personnel decertified for cause will attend flexible borescope training and be recertified by a certifying official.
14.17.8.1. (Added) Annual recertification will include a high interest borescope inspection (e.g. blade tip curl HS3 inspection on the F100-series engine), when applicable.

14.18.6.1.1. Or civilian equivalent.
14.19.2.1. Personnel will also account for all hardware used during maintenance actions. Screw bags, plastic bags etc will be used to store hardware and will be annotated with the type of hardware, quantity, aircraft tail number/engine/number or component number to readily identify what end item they belong to.
14.19.2.1.1. (Added) Control removed caps and plugs IAW para 11.10 "operating stock".
14.19.2.5. In addition to the parent document, restricted area badges will be secured with any of the following type devices: plastic armband; nylon neck cord with breakaway feature, or button with nylon macramé that can be securely affixed to the uniform. The use of metal on these items should be kept at a minimum, (i.e. clip or spiral key ring) and if used; ensure that it cannot be separated from the cord. They will also be removed when any other AFI/TO or hazardous situation is identified.
14.19.2.8. Containers will be stenciled with the word "FOD" in contrasting letters no smaller than two inches. Back shops may locally manufacture small FO containers that can be used when an area collection can is not feasible. These containers must be stenciled with the word "FOD" in contrasting letters no smaller than two inches. All FOD containers, regardless of location, will be emptied when full or once a day.
14.19.2.8.1. (Added) Procedures will also apply to those vehicles normally driven in maintenance production areas.
14.19.2.9. Establish and tailor rivet replacement procedures for local operation of assigned weapons systems. Include the procedures as part of the FOD orientation/familiarization for personnel working in these areas. Include work order residue control procedures for all maintenance performed in and around intake areas.
14.19.2.9.1. (Added) Aircraft Structural Maintenance shops and Low Observable Aircraft Structural Maintenance shops will develop local publication checklist for intake repairs. All parts and pieces installed and removed from the aircraft will be documented and verified by a 7-level. The checklist will be completed on the job site and turned into QA within 24 hours of repair completion. Aircraft Structural Maintenance and Low Observable Aircraft Structural Maintenance technicians are not required to meet the training requirements of Paragraph 14.4.
14.19.2.17. When inspecting tires, complete a roll-over check to ensure entire surface is inspected for FOD.
14.19.2.21. Leave inspection and load tolerance tags attached.
14.19.3.1. The FOD prevention program oversight is placed at the wing level to emphasize that FOD prevention is a team effort requiring support from all base units. The Wing FOD Monitor should possess a 2A671A/B, 2A571, or 2A373 AFSC (or civilian equivalent). It is highly recommended that the Wing FOD Monitor attend the Jet Engine Mishap Investigation Course.

14.19.3.2.1. Ensure all maintenance, operations, base support, and contractor personnel who work in, around, or drive through maintenance and/or operational areas are trained on FOD prevention annually. Ensure an initial FOD awareness/responsibilities briefing is given to all newly assigned personnel.
14.19.3.2.7. (Added) Ensure the wing submits maintenance crosstell reports by message to HQ AFMC/A4M and to all units with like MDSs for incidents that have a FOD potential for the fleet.
14.19.3.3. (Added) Command FOD Manager. The Command FOD Manager is located at HQ AFMC/A4M and shall:
14.19.3.3.1. (Added) Conduct annual AFMC FOD meetings.
14.19.3.3.2. (Added) Clarify policy and assist units in resolving FOD issues.
14.19.3.3.3. (Added) Work with other MAJCOM FOD managers to resolve FOD issues between the Centers and owning commands.
14.19.3.3.4. (Added) Notify owning command of FOD incidents involving their assets.
14.19.3.3.5. (Added) Command FOD/DOP Manager responsibilities include:
14.19.3.3.5.1. (Added) Providing quarterly and annual FOD/DOP roll-up data to A4.
14.19.3.3.5.2. (Added) Conducting annual AFMC FOD/DOP meeting either in-person or telecom.
14.19.3.3.5.3. (Added) Establishing FOD/DOP command reporting procedures.
14.19.3.3.5.3.1. (Added) Computing Wing rates monthly. Wing FOD Monitor will submit AFMC Form 40, <i>Foreign Object Damage Report</i> , to HQ AFMC/A4M by the 15 th of each month. Providing fiscal year roll up to HQ AFMC/A4M NLT 15 October.
14.19.3.3.5.3.2. (Added) Ensuring each Wing FOD monitor submits FOD quarterly (monthly if exceeding FOD standard of 3.0) reports to HQ AFMC/A4M workflow NLT the 15 th day of the new quarter. Reports will include monthly cumulative FOD data in the following format:
14.19.3.3.5.3.2.1. (Added) Number of preventable and non-preventable FODs (damage exceeding \$50K).
14.19.3.3.5.3.2.2. (Added) Causes of preventable and non-preventable FODs.
14.19.3.3.5.3.2.3. (Added) Cumulative cost of preventable and non-preventable FODs.

14.19.3.3.5.3.2.4. (Added) MDS flying hours.
14.19.3.3.5.3.2.5. (Added) Calculated unit FOD rate by MDS and current cumulative fiscal year FOD rate.
14.19.4.6. (Added) Review and analyze all unit FOD mishap reports and other data for trends that identify areas requiring management action. Newly assigned FOD monitor will:
14.19.4.6.1. (Added) Review all applicable FOD/DOP program instructions, HQ AFMC LSET FOD/DOP checklist, and validate locally developed self-inspection checklists within 30 days of being assigned.
14.19.4.6.2. (Added) Review and validate FOD/DOP program continuity books, and develop and maintain program continuity if not made available at time of assignment. Ensure continuity programs are in place that depict procedures for accomplishing tasks associated with each duty position. Develop continuity book IAW local publication.
14.19.4.6.3. (Added) Complete all training requirements.
14.19.4.6.4. (Added) Contact Command FOD/DOP program manager for assistance as needed.
14.19.4.7. (Added) Ensure engine inlet run-up screens and anti-personnel guards are used IAW applicable technical data.
14.19.4.8. (Added) Ensure QA inspection checklists/evaluations include FOD prevention.
14.19.4.9. (Added) Ensure evaluated or repaired engine FOD is documented in the AFTO Form 95, <i>Significant Historical Data</i> , IAW TOs 00-20-1, <i>Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures</i> and 00-20-2, <i>Maintenance Data Documentation</i> .
14.19.4.10. (Added) Ensure tenant units appoint a unit FOD monitor for their units and that they are actively involved on the host wing's FOD prevention program/committee.
14.19.4.11. (Added) Ensure wing detachments establish a FOD prevention program and provide FOD reports to the parent wing's FOD monitor.
14.19.5.1. MOC will immediately notify Airfield Management when cut or damaged tires are discovered after taxiing or aircraft tows.
14.19.5.2.2. Determined after investigation.
14.19.5.6.1. Format, at a minimum, will be IAW Attachment 12 . The following FOD/DOP incident reporting requirements will be followed:

14.19.5.6.1.1. (Added) The Wing FOD/DOP monitor will submit ALL FOD/DOP reports, with the exception of minor sand nicks and scratches to, HQ AFMC/A4M Workflow. Inform the Wing CV or equivalent of all incidents.
14.19.5.6.1.2. (Added) Use guidance for FOD/DOP control numbers as written on Attachment 12 .
14.19.5.6.1.3. (Added) The Wing FOD/DOP monitor will ensure the investigation has been completed and all data for the FOD/DOP report is accurate and complete before closing the report.
14.19.5.6.2. (Added) Establish a Wing level FOD/DOP Organizational group email address.
14.19.5.6.3. (Added) If the FOD incident is deemed a mishap IAW AFI 91-204, <i>Safety Investigations and Reports</i> , the Wing FOD monitor will still initially report the FOD incident then work in tandem with the Wing SE office to properly report the mishap.
14.19.5.6.4. (Added) All DCMA managed units at contracted facilities will report FOD incidents to Command FOD/DOP manager IAW 14.19.5.6. and 14.19.5.6.1. on AFMC possessed/assigned aircraft.
14.19.5.7. The preventable FOD standard for AFMC is 3.0.
14.19.5.8. (Added) When transient/deployed aircraft incur FOD, the host unit will conduct the investigation and notify the owning organization immediately.
14.19.5.9. (Added) The owning organization is responsible for FOD incidents and investigations on transient aircraft/engines when one of the following conditions applies:
14.19.5.9.1. (Added) FOD is discovered upon arrival at a transient base with no intermediate stops or prior to any engine run.
14.19.5.9.2. (Added) FOD is found during initial tear down on queen bee/ ERRC engines.
14.19.5.9.3. (Added) When the owning organization's maintainers are deployed with the aircraft and the FOD is a direct result of transient/deployed unit negligence.
14.19.5.10. (Added) FOD discovered by transient alert facilities or by depot and contractor facilities during acceptance inspections will be charged to the base from which the aircraft last departed if a FOD inspection was not accomplished/documented and there were no intermediate stops.
14.19.5.11. (Added) For F-15 aircraft sustaining engine FOD caused by an unknown source, extend the vari-ramps, thoroughly inspect all accessible components and areas within vari-ramps cavity, close vari-ramps, X-ray vari-ramps and lower louver areas IAW applicable TO, then

compare these X-rays with previous X-rays of the aircraft to determine movement or missing items.
14.19.5.12. (Added) For Class A and other mishaps, investigation personnel will coordinate with the wing or base safety office to ensure AFI 91-204, <i>Safety Investigations and Reports</i> , requirements are met.
14.19.6. Additionally, the following will be considered for minimum attendance at the FOD Prevention Committee Meeting: Center FOD Monitor, the designated Union representative, Center or Wing Maintenance Training, Flight test representative, Contracting (As applicable), Center tool control manager, and the ABW/CV.
14.19.6.1. In addition to the agenda items, the minutes will include as a minimum a list of attendees and absentees. Attendees list will identify the wing FOD monitor and provide functional address symbol and duty phone number for all personnel. Meeting minutes will be made available to FOD committee members.
14.20.3. (Added) Deferred Discrepancy Management.
14.20.3.1. (Added) Deferred Discrepancies. Timely accomplishment of deferred maintenance is the responsibility of the applicable AMU and/or MXS Flights. Uncorrected discrepancies not creating NMC or PMC status are deferred discrepancies and loaded into MIS as soon as possible. Discrepancies are considered deferred as soon as they are discovered and the decision is made to delay corrective action. Discrepancies deferred due to non-availability of parts are promptly loaded to MIS when backordered through supply. The decentralized supply support/material control section enters supply data against deferred discrepancies and notifies the PS&D and work center once parts are received. Discrepancies will not remain in "unscheduled" status for more than 1 workday from the date of discovery. Discrepancies with a scheduled start date and time greater than 5 days after the date of discovery are reportable deferred discrepancies. Discrepancies scheduled but not accomplished on the date scheduled are counted and reported in the deferred discrepancy rate. AWP discrepancies with a valid off-base requisition are reportable deferred discrepancies. TCTOs, TCIs, SIs, and OTIs in deferred status are not reportable deferred discrepancies.
14.20.3.1.1. (Added) The deferred discrepancy file, although centralized in the computer, is still considered as two separate and distinct files: one consisting of discrepancies AWP, and the other consisting of discrepancies AWM. The responsibility for maintaining AWM discrepancies in MIS lies with the technician who makes the inputs. The MX Supt or designated representative will develop procedures for reviewing the deferred discrepancy file and identifying any problem areas requiring resolution. Constant monitoring of MIS (IMDS screen #380) is required to ensure scheduled work is deferred again if not completed. The AWP file is maintained by decentralized supply support/materiel control.
14.20.3.1.2. (Added) Equipment discrepancy files for equipment other than aircraft, may be decentralized to the appropriate shop.

14.20.4. (Added) Discrepancies deferred for parts:
14.20.4.1. (Added) Decentralized supply support/materiel control promptly loads the supply document number into MIS for each aircraft discrepancy, which cannot be corrected due to backordered parts. Units using the SBSS module of MIS follow procedures outlined in AFCSM 21-579, Vol 2.
14.20.4.2. (Added) The decentralized supply support/materiel control notifies the production superintendent, expediter, and MOC when MICAP parts are received.
14.20.4.3. (Added) Items picked up from the TNB or issued from base supply, but are not installed, will be returned to the TNB by the end of the duty day, with a DD Form 1348-1A, <i>Issue Release/receipt Document</i> , and appropriate condition tag.
14.21.2.2.8. Quality Assurance shall perform an aircraft records review a minimum of every 60 days.
14.21.2.2.10.6. (Added) QA will monitor assigned GITA for safety and serviceability.
14.22.3.2.1. (Added) Units will report Category 2 Hangar Queen to Lead Command providing Top Down drivers for Hangar Queen status updated on a monthly basis. The minimum information required to report is:
14.22.3.2.1.1. (Added) Hangar Queen Management POC.
14.22.3.2.1.2. (Added) Aircraft MDS and Tail #.
14.22.3.2.1.3. (Added) Unit of Assignment/Possession.
14.22.3.2.1.4. (Added) Date last flown.
14.22.1.2.1.5. (Added) Reason for Hangar Queen status.
14.22.1.2.1.6. (Added) Document number for parts on order for reason of Hangar Queen status.
14.22.1.2.1.7. (Added) Estimated next fly day.
14.22.1.2.1.8. (Added) Is Lead Command assistance required.
14.22.3.3.1. (Added) Units will report Category 3 Hangar Queen to Lead Command providing Top Down drivers for Hangar Queen status updated on a monthly basis. The minimum information required to report is:
14.22.3.3.1.1. (Added) Hangar Queen Management POC.

14.22.3.3.1.2. (Added) Aircraft MDS and Tail #.
14.22.3.3.1.3. (Added) Unit of Assignment/Possession.
14.22.3.3.1.4. (Added) Date last flown.
14.22.1.3.1.5. (Added) Reason for Hangar Queen status.
14.22.1.3.1.6. (Added) Document number for parts on order for reason of Hangar Queen status.
14.22.1.3.1.7. (Added) Estimated next fly day.
14.22.1.3.1.8. (Added) Is Lead Command assistance required.
14.23.15. Training and certification requirements for hot refuel team members are outlined in Table 14.2. (Added) .
14.23.15.1. (Added) Personnel are decertified if they miss any semi-annual proficiency requirement or annual special requirement. Personnel can also be decertified by any hot/aircraft-to-aircraft refueling supervisor, squadron/immediate supervisor, or QA any time one of these individuals sees an unsafe act or demonstrated lack of proficiency on the part of any hot/aircraft-to-aircraft refueling team member.
14.23.15.1.1. (Added) Recertification requirements can be found in Table 14.2 (Added).
14.28.1.3. Units will accomplish full RWR/RTHW system checkouts on loaned aircraft during aircraft transfer inspections. All anomalies in the RWR/RTHW systems will be corrected prior to transferring the aircraft back to the owning unit.

Table 14.1. Mandatory Special Certification Roster (SCR) and Prerequisites

Item	A	B
	Mandatory SCR Item Titles	Prerequisites
	NOTE: For tankers, airlift, bomber and passenger aircraft include the following on SCR	
39 (Added)	T-38 Flight Control/System Rig Certifier	Minimum 7-skill level or civilian equivalent, 12 months experience adjusting system rigging. Certifies specialized MX rig teams to accomplish flight control, canopy, landing gear, door, and other systems rigging. (Note 1)
40 (Added)	T-38 Flight Control/System Rig Team Member	Minimum 7-skill level or civilian equivalent, 12 months experience performing system rigging. Performs flight control, canopy, landing gear, door, and other systems rigging as team member when directed. Member may be CUT trainee (Note 1)
41 (Added)	Landing Gear Retraction Supervisor	(Supervisor) SSgt or higher or civilian equivalent, minimum 7-skill level.
42 (Added)	Landing Gear Retraction Member	(Gear handle operator) minimum 5-skill level, and 1 year flight line experience
43 (Added)	Jacking supervisor	Minimum 7-skill level or civilian equivalent, 6 months system experience
44 (Added)	Jacking Manifold Operator	Minimum 5-skill level or civilian equivalent, 6 months system experience
45 (Added)	Integral Jacking Member (C-17)	Minimum 6 months C-17 experience (Note 2)
46 (Added)	Integral Jacking Supervisor (C-17)	Minimum SSgt (or civilian equivalent), 6 months minimum C-17 system experience (Note 2) (MXG/CC may waive selected SrA FCCs)
47 (Added)	Integral Jacking Certifying Official (C-17)	Minimum 7-skill level or civilian equivalent, with minimum 1 year C-17 experience

Table 14.2. (Added) Hot/Aircraft-to-Aircraft Refueling Training/Certification Requirements

Position	Required Training	Proficiency Requirements	Special Requirements
Squadron Certifier	I, II, III	1 Hot Refuel Semi-Annually	Annual Evaluation and one PE by QA Chief Inspector
Pad Supervisor	I, II, III	1 Multiple Hot Refuel Semi-Annually	Annual Evaluation by QA or SC
Refuel A,B,C,D Member	I, II, III	1 Hot Refuel Semi-Annually, "C" Annually	Annual Evaluation by QA or SC
Decertified Squadron Certifier or Pad Supervisor	Repeat II, III		Recertification must be started within 90 days or Phase I will also be completed PE by QA Chief Inspector
Decertified A,B,C,D	Repeat II, III		Recertification must be started within 90 days or Phase I will also be completed

14.34.3. In addition to the mandatory prerequisites identified in AFI 21-101, include the following (separately or in combination) on unit SCR: See **Table 14.1**

14.38. (Added) Oil Analysis Program.

14.38.1. **(Added)** General. Accurate oil sampling determines the internal condition of engines and accessories. Coordination with the Oil Analysis Program (OAP) laboratory is required to obtain maximum benefits from OAP data when abnormal wear metal trends are indicated. It is imperative that an aggressive unit OAP be established and specific responsibilities and requirements are adhered to. AFI 21-124, *Oil Analysis Program*, provides procedural guidance and assigns responsibility for managing the Program and for participating in the Joint Oil Analysis Program (JOAP). Specific responsibilities, procedures, and requirements will be locally developed and formalized as a local directive. Aircraft which do not have a TO oil analysis requirement are exempt from this program.

14.38.2. **(Added)** HQ AFMC/A4MM responsibilities:

14.38.2.1. **(Added)** Manage the command OAP program.

14.38.2.2. **(Added)** Appoint a qualified SNCO (or civilian equivalent) to manage the OAP and serve as a point of contact for OAP activities.

14.38.3. **(Added)** MXG/CC/CL or equivalent responsibilities:

14.38.3.1. (Added) Appoints a Wing OAP Manager and alternate and forwards copy of appointment letter to the OAP laboratory.
14.38.3.2. (Added) Ensure all units maintain an effective wing OAP.
14.38.3.3. (Added) Manage the OAP IAW TO 33-1-37-1/2/3, <i>Joint Oil Analysis Program Manual Volume I, II, III</i> , AFI 21-124, <i>Oil Analysis Program</i> and other applicable directives.
14.38.3.4. (Added) Ensure a wing OAP publication and training plan is published to establish policy and procedures for the wing OAP. Include a standardized method to ensure the total oil serviced since the last OAP sample can be tracked and accurately entered on the DD Form 2026, <i>Oil Analysis Request</i> .
14.38.3.5. (Added) Ensure the non-destructive inspection (NDI)/OAP facility is on a priority repair list for CE.
14.38.3.5.1. (Added) Develop procedures for continued operation of OAP lab in case of a power outage.
14.38.3.6. (Added) Ensure the NDI/OAP facility has a Class A telephone and a direct line to MOC to expedite the reporting of abnormal wear metal trends.
14.38.3.7. (Added) Ensure all organizations requiring OAP support appoint an OAP monitor and alternate in writing.
14.38.3.7.1. (Added) Ensure a current approved copy of the appointment letter is kept on file by the requesting organization and a copy sent to the OAP laboratory and the wing OAP manager.
14.38.3.7.1.1. (Added) The unit OAP monitor will be an NCO or civilian equivalent with experience necessary to manage unit's program. They serve as the primary liaison between the OAP labs for all OAP issues and will attend all OAP meetings.
14.38.3.8. (Added) Personnel involved in OAP will be trained IAW the wing's OAP training plan. Personnel requiring this training include, but are not limited to; crew chiefs, expeditors, production supervisors, aircraft flight chiefs, unit OAP monitors, propulsion managers/supervisors, and aircraft maintenance operation officers/superintendents.
14.38.3.9. (Added) Conduct quarterly OAP meetings with director(s), MOS, MXA/ superintendent, propulsion flight chief, unit OAP monitor or alternates, and NDI section NCOIC/ designated representative.
14.38.4. (Added) AMXS/MXA responsibilities:
14.38.4.1. (Added) Ensure all assigned aircraft engines are sampled IAW applicable -6 TO.

14.38.4.1.1. (Added) The only exception to this is when aircraft are hot refueled (Aircraft land and takeoff with no engine shutdown). When this occurs: A-10 aircraft will be sampled immediately after the second pit and go sortie with OAP sample results known prior to the next sortie (only two sorties flown due to hotpit refuel before an OAP sample is taken and analyzed and the results known); F-16 aircraft with Pratt and Whitney (P&W) engines will be sampled immediately after the first pit and go sortie with OAP sample results known prior to the next sortie (only one OAP sample interval can be missed due to hot refuel); and F-15 aircraft, regardless of installed engine type, and F-16 aircraft with General Electric (GE) engines will be sampled at the first return to parking with OAP sample results known prior to the next sortie.
14.38.4.2. (Added) Ensure aircraft that fails to meet required OAP Sample Response Time (SRT) or are not sampled as required by applicable -6 are not flown until OAP sample results are known.
14.38.4.3. (Added) Ensure OAP samples not taken within the required time period by the applicable -6 have a 15 minute ground run accomplished prior to the engine being sampled. This ensures a true homogenous sample is obtained for an accurate analysis.
14.38.4.4. (Added) Ensure OAP samples are delivered to the OAP lab with a DD IMT 2026 or locally overprinted DD IMT 2026, Oil Analysis Request, filled out IAW TO 33-1-37-1, <i>Joint Oil Analysis Program Manual Volume I</i> . Qualified technicians will fill out the DD Forms 2026 completing the oil added, hours since overhaul, hours since oil change, and time sample taken blocks indicating when the oil sample was taken.
14.38.4.4.1. (Added) Use engine flight time in the DD Form 2026 “hours/miles since overhaul” block. EXCEPTION: F100 series engine wear metal trends are based on engine operating time. This time will be downloaded at the end of the flying day for F100-220/229 engines requiring aircraft and NDI/OAP lab records to be adjusted accordingly.
14.38.4.5. (Added) Ensure flightline personnel verify with the OAP lab that information entered in the OAP records on the DD Form 2027, <i>Oil Analysis Record</i> , or automated OAP records matches the scheduled aircraft records check. As a minimum, the information that will be verified is engine operating hours, time since oil change, oil serviced since last records check or OAP sample, engine serial number(s), and aircraft serial number. NOTE: MXG/CC/CL/CD (or equivalent) may waive verification of OAP records against aircraft records when aircraft are deployed and scheduled records check is due.
14.38.4.6. (Added) Ensure OAP monitors are properly trained as required in TO 33-1-37-1.
14.38.4.7. (Added) Ensure all aircraft engines under special OAP codes C, E, and F are not flown until results of the OAP sample(s) are known.
14.38.4.8. (Added) Ensure DD Forms 2026, with an equipment and/or end item serial number error, hours since overhaul error, or oil added since last sample error are corrected immediately.

14.38.4.9. (Added) Ensure flightline expeditors maintain a OAP status on each assigned aircraft engine showing all lab recommendation codes that are not routine (code A) next to the aircraft serial number.
14.38.4.10. (Added) Ensure all maintenance actions that affect oil-wetted engine components are provided to the OAP lab. This should be done by using the remarks section of the DD Form 2026 (or a suitable local form).
14.38.4.11. (Added) Ensure MOC is notified of information regarding engine changes on- and off-station as they occur, but NLT 0800 the next duty day.
14.38.5. (Added) Propulsion flight chief responsibilities. In addition to the responsibilities outlined in Chapter 2 of this instruction, the flight chief will:
14.38.5.1. (Added) Ensure accurate and timely deficiency reports (DR) are submitted through the unit product improvement manager (PIM) to the applicable Air Logistics Center (ALC) engine program offices on all engines requiring tear down or overhaul due to an OAP laboratory maintenance recommendation and on all oil-wetted component failures where no OAP laboratory maintenance recommendation was made.
14.38.5.2. (Added) Ensure a copy of the DD Form 2027 (or suitable automated form) is provided to the depot for each engine undergoing scheduled maintenance or overhaul at the depot.
14.38.5.3. (Added) Make the final decision regarding all OAP engine maintenance action recommendations.
14.38.5.4. (Added) Ensure all maintenance actions which affect oil-wetted engine components, are provided to the OAP laboratory. This should be done by using the remarks section of DD Form 2026 (or a suitable local form).
14.38.5.5. (Added) Appoint OAP monitors in writing and forward a copy of appointment letter to wing OAP manager and OAP lab. Appointment letters should include grade, name, duty phone, AFSC, organization, and office symbol.
14.38.5.6. (Added) Ensure OAP monitors are trained as required IAW TO 33-1-37-1.
14.38.5.7. (Added) Ensure assigned OAP monitors or alternates attend all OAP meetings.
14.38.5.8. (Added) Ensure oil samples taken at the test cell are promptly delivered to the OAP laboratory. Red cap samples will be delivered immediately for analysis.
14.38.5.8.1. (Added) Engines will not be removed from the test stand until the sample results have been analyzed.

14.38.6. (Added) MOC Supervisor responsibilities. The supervisor will:
14.38.6.1. (Added) Maintain an OAP status on each assigned aircraft engine showing all lab recommendation codes that are not routine (Code A) next to the aircraft serial number.
14.38.6.2. (Added) Serve as primary communications link for the transfer of OAP information between the OAP lab and its customers.
14.38.6.3. (Added) Relay to the OAP lab, information regarding engine changes on- and off-station as they occur, but NLT 0800 the next duty day.
14.38.7. (Added) NDI/OAP Laboratory NCOIC responsibilities.
14.38.7.1. (Added) Primary OAP responsibilities outlined in TO 33-1-37-1/2/3 apply whether or not the laboratory providing OAP support is located on the same base. If the unit does not have NDI personnel assigned, the OAP responsibilities outlined in TO 33-1-37-1/2/3 are assigned to the propulsion flight. The OAP OPR forwards samples in a timely manner to the laboratory providing OAP support
14.38.7.2. (Added) Sets up collection points and procedures to receive and forward OAP samples to the supporting laboratory, monitors sample collection, assigns control numbers and provides blocks of sample control numbers for use in other squadrons.
14.38.7.3. (Added) Advises squadron maintenance operations, MOC, and OWC of abnormal OAP trends. Local procedures will be established to ensure proper notification of abnormal OAP trends.
14.38.7.4. (Added) Reviews response times, from sampling to receipt at the laboratory, and the time it takes for results to return to the unit to ensure processing of samples meets mission needs.
14.38.7.5. (Added) Operates the OAP laboratory and maintains environmental controls IAW TO 33-1-37-1/2/3, AFI 21-124, and other applicable directives.
14.38.7.6. (Added) Documents the scheduled record check on the affected engine's OAP record with the date the check was accomplished and OAP lab person's initials.
14.38.7.7. (Added) Ensures a copy of the DD Form 2027 (or suitable automated form) is provided to the propulsion flight for each engine undergoing scheduled maintenance or overhaul at the depot.
14.38.7.8. (Added) Immediately notifies MOC when an installed engine is restricted from operation or is placed on special sampling.
14.38.7.9. (Added) Ensures analysis results on all installed engines are provided to MOC after analysis of the OAP sample is complete.

14.38.7.10. (Added) Immediately notifies test cell and the propulsion flight chief when abnormal OAP results are discovered on test cell engines.
14.38.7.11. (Added) Ensures DD Form 2026, with an error(s) on equipment and/or end item serial number, hours since overhaul, or oil added since last sample are corrected immediately.
14.38.7.12. (Added) Tracks aircraft OAP SRTs for all assigned aircraft to ensure the response time requirements are being complied with.
14.38.7.13. (Added) Maintains a current appointment letter of all customer OAP managers.
14.38.8. (Added) OAP Sample Response Time (SRT) requirements for routine OAP samples. The OAP SRT time begins at the time the OAP sample is taken and ends at the time the oil analysis results are reported to the MOC. The following are SRTs:
14.38.8.1. (Added) Two and one half-hours for one and two engine aircraft.
14.38.8.2. (Added) Six hours for all other aircraft. When the OAP lab is not manned, they will provide results to MOC NLT two hours after the beginning of the next shift.
14.38.8.3. (Added) Immediately process special Red Cap samples (OAP lab recommendation codes B, C, E, F, G, P, and Q)
14.38.8.4. (Added) Four hours for engine ground/trim and test cell runs.
14.38.9. (Added) The following are OAP requirements for cross-country flights/deployments.
14.38.9.1. (Added) Personnel place an oil analysis record (Automated record or a copy of the DD Form 2027) in the aircraft records jacket/forms binder.
14.38.9.2. (Added) OAP lab personnel ensure the oil analysis record contains at least the last 10 analyses if available.
14.38.9.3. (Added) Personnel sign for the oil analysis record at the OAP lab and return it to the lab the day the aircraft returns to home station.
14.38.9.4. (Added) MOC notifies the OAP lab when cross-country/deployed aircraft return.
14.38.9.5. (Added) The OAP lab notifies MOC if the oil analysis record is not returned.
14.38.9.6. (Added) MOC initiates follow-up action when the oil analysis record is not returned to the OAP lab.
14.38.9.7. (Added) OAP Lab will attempt to retrieve analysis results from support labs if cross-

country paperwork is not returned or cannot be found. If results cannot be obtained from supporting bases, engine shall be placed on surveillance to establish a new trend.
14.38.9.8. (Added) OAP lab reviews returned oil analysis records for adverse trends and takes necessary action.
14.38.9.9. (Added) Flying squadrons will continue to follow the maintenance practices of this instruction and local policy at the deployment site.
14.38.9.10. (Added) Deployed OAP personnel will have either telephone or radio communication with MOC and the flying squadrons to expedite reporting of abnormal OAP trends
14.38.10. (Added) The following are OAP requirements for transient aircraft (TA).
14.38.10.1. (Added) TA personnel sample aircraft as required by this section and applicable -6 TO.
14.38.10.2. (Added) TA personnel draw/perform the OAP sample and make a Red Dash entry on the AFTO Form 781A stating "Engine oil analysis results due".
14.38.10.3. (Added) When OAP capability exists at a transient location and an OAP sample is required, the OAP sample results will be known prior to aircraft departure unless otherwise authorized by the MXG/CC/CL/CD or equivalent at the transient location.
14.38.10.3.1. (Added) If OAP sample results are not provided before aircraft departure, the results will be forwarded via FAX/other electronic means by the local MOC or TA to the aircrew's next destination (either MOC, TA, or base operations).
14.38.10.4. (Added) Transient bases without OAP capability will take required OAP samples. The OAP samples will be analyzed at the next base along with the next OAP sample.
Chapter 15 - MAINTAINING COMMERCIAL DERIVATIVE AIRCRAFT
15.11. Aircraft and Component Modifications. T-1 and T-2 Modifications on aircraft and components having FAA certification shall not cause the aircraft to lose its FAA certification. All modifications to such aircraft shall comply with AFD 62-6 USAF Airworthiness. Such modifications are required to keep the weapon system or aircraft in compliance with FAA standards and to maintain FAA certification.
Chapter 16 - AIRCREW EGRESS SYSTEMS MAINTENANCE
This section intentionally left blank. No supplemental data necessary.
Chapter 17 - CENTRALIZED REPAIR FACILITIES (CRFS)

17.3. Command Authority. When a Repair Network is established, production oversight and monitoring within the repair network will be accomplished by the Repair Network Manager (RNM).
17.3.1. The Repair Network Integration (RNI) Program Management Office (PMO) will be the integrator between AFMC and the Air Staff regarding AF policy development for the Air Force Repair Network.
17.3.2. When a Repair Network is established, CRF production will be monitored by the Product Repair Manager (PRM) and RNM.
17.3.3. When a Repair Network is established, CRF commodity distribution will be a collaborative effort between the PRM, RNM, CRF C2, and Repair Nodes.
17.3.5. When a Repair Network is established, the RNM will coordinate requirements with the AFGLSC Supply Chain Weapon System Teams to monitor enterprise health of the managed commodities. Negative trends will be dealt with IAW Repair Network policy.
17.3.8. Repair Enterprise Managers (PRM/RNM, etc) will develop clear guidance on Metrics/Status reporting requirements for the commodities within the Repair Enterprise as outlined in Repair Network policy. Metrics/Status Report requirements will be accomplished by the RNM and coordinated as outlined in Repair Network policy.
17.5. Rotable Pools. CRP requirements for items managed in the propulsion network will be determined using the Propulsion Requirements System process outlined in AFI 21-104, <i>Selective Management of Selected Gas Turbine Engines</i> .
17.6.1. When a Repair Network is established, management of “CANN Assets” within the network will rest solely with the RNM as outlined in Repair Network policy.
17.8. Metrics. When a Repair Network is established, CRF managers will report required Metrics to the RNM for consolidation. The RNM will report Network Metrics IAW Repair Network policy.
17.10.4.1. When a Repair Network is established, the PRM/RNM will participate in all AEF requirements development processes. COMAFFOR/A4 and supporting command A4 will coordinate requirement changes through the PRM/RNM for implementation.
17.10.4.2. When a Repair Network is established, the RNM will work with the CRF supporting command to determine the best location for the CRF and outline CRF spare levels, equipment/personnel requirements, and CONOPS ensuring the effect on the Repair Network Enterprise is appropriately considered.
17.10.4.4. When a Repair Network is established, all supported unit requirements will be coordinated through the RNM for sourcing decisions. In situations where COMAFFORS

compete for CRF resources, the A4 staffs, supporting commands and RNM will reach agreement on asset distribution. If required, AF/A4 will be consulted to ensure priorities are satisfied correctly.

17.10.4.5. When a Repair Network is established, the RNM, in collaboration with the CRF supporting command and CRF management, will determine CRF capabilities utilizing the Capability and Capacity (CAP2) Tool as outlined in the Repair Network Implementation Guide.

17.10.4.5.1. AFGLSC will assist with kit management and replenishment as required.

17.10.4.5.2. When a Repair Network is established; the RNM and CRF managers will determine distribution of assets among CRPs. Propulsion CRP levels will be determined using the PRS process.

17.10.4.6.3. When a Repair Network is established, retention of “CANN assets” will be coordinated between the COMAFFOR/A4, supported command, and RNM.

17.10.5.2. When a Repair Network is established, manual intervention of Execution and Prioritization of Repair Support System (EXPRESS) managed commodities will be directed by the RNM.

Chapter 18 - CONTRACT SURVEILLANCE

18. (Added) Introduction. The objective of logistics program management is to integrate the performance-based operation into the supported AF mission, monitor the life-cycle management of government property, and execute the business end of the AF programs. This chapter applies to AF units performing duties across the full spectrum of logistics. This includes conventional force logistics units; nuclear and nuclear support units; space; special operations; wholesale-level procurement, sustainment, and maintenance; logistics support to research, test, and development units; and logistics support to special access programs. This chapter establishes guidelines for performance management and surveillance of performance-based activities performing make and repair activities which include all organizations within the wholesale and base-level logistics enterprise that conduct activities related to the manufacture and repair of assets to support weapon systems. This encompasses organizations that perform generation, launch, recovery, ground handling, and servicing of aircraft. It includes organizations that perform manufacturing, maintenance (organizational/ intermediate/depot to include on-equipment maintenance/repair and off-equipment maintenance/repair functions) repair, calibration, overhaul, or inspection of: aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities. This chapter shall be used in concert with AFI 63-101 and other applicable guidance, FAR, etc, (or the instruction in existence at the time of contract award). This includes contracts totaling \$100K or more.

18.1. Government Contract Quality Assurance. COR/COR is used to describe all government personnel appointed to surveil service contracts.

18.1.1. AFMC units to include Maintenance wings (ALCs), maintenance groups (test wings), AEDC, and air base wings which have performance-based maintenance or maintenance support activities shall establish a single, centralized program management office (PMO) also know as Contract Management Office (CMO). In the ALC, the MXW PMO office will be located with the MXW/QP. For installations which have performance-based maintenance and maintenance support activities shared between two or more wings, the wing which established the contract will be responsible for overseeing and managing the contractor's performance. The PMO will consist of a full time, dedicated staff to initiate, oversee and manage performance-based activities within the maintenance wing/group. The PMO will consist of a program manager, COR chief(s) and COR(s). The Chief COR may serve as both the program manager and Chief COR when the workload does not justify both positions. Additionally ACO/PCOs who administer the performance-based maintenance contracts will be assigned or matrixed to the PMO to ensure a comprehensive team focused on administration and management of the contracted operations. The office may include subject matter experts from various functional areas (e.g., CE, communications, contracting, finance, plans, and logistics). All contracts will be coordinated with the PMO to ensure consistency and standardization of PWSs and to minimize the number of contracts for similar operations.

18.1.1.1. **(Added)** The PMO will:

18.1.1.1.1. **(Added)** Develop guidance for and coordinate on all PPs.

18.1.1.1.2. **(Added)** Ensure adequacy of training program for CORs and track training to ensure currency for FC/FDs, Chief CORs and CORs.

18.1.1.1.3. **(Added)** Coordinate on all service contracts to ensure contractor operations at least meet AF standards and to minimize disruptions to mission.

18.1.1.1.4. **(Added)** Ensure adequacy of PWS/SOW by utilization of the S.M.A.R.T. concept. This concept, when utilized, will ensure the PWS/SOW captures specific, measurable, attainable, realistic, and timely (SMART) goals for the contractor and their quality assurance plan.

18.1.1.1.5. **(Added)** Avoid multiple contracts for the same or similar operations.

18.1.1.1.6. **(Added)** Ensure AF maintenance standards are included in the PWS where practicable. These standards include but are not limited to: tool control, FOD prevention, safety (where government resources are exposed to risk by contracted operations), *tool and* equipment management, and materiel control.

18.1.1.1.7. **(Added)** Ensure AF maintenance data collection and information management systems such as IMIS, FEMS, AMCS, IMDS, CEMS, G081, SBSS, and AFEMS are mandated in the PWS where practicable.

18.1.1.1.8. **(Added)** Conduct a quarterly review of activities with COR chief(s), CORs and ACO/PCOs.

18.1.1.1.9. (Added) Develop local procedures to ensure standardized PMAP and documentation.
18.1.1.1.10. (Added) Keep up-to-date on mission changes that could affect creation of a contract modification and advise the FC/FD.
18.1.1.1.11. (Added) Oversee the development of a PMAP that effectively measures and evaluates contractor, MEO, or HPO performance throughout the life of the contract or management plan.
18.1.1.1.12. (Added) Ensure PMAP implements the requirements of applicable guidance, and this chapter.
18.1.1.1.13. (Added) Review problem areas with the PCO/ACO to resolve the problems. If the problem cannot be resolved, advise the FC/FD and request assistance through command channels.
18.1.1.1.14. (Added) Review documents related to default/re-compete prior to scheduled recompetition; contract Section C , PWS/SOW, requirements document or scope of work modifications; changes to award fee plan (if applicable); contractor, MEO, or HPO proposals to new or revised DoD, AF, MAJCOM, and local directives.
18.1.1.1.14.1. (Added) Related documents include:
18.1.1.1.14.1.1. (Added) Intent or consideration to default or re-compete the contract prior to the scheduled recompetition.
18.1.1.1.14.1.2. (Added) Modifications to the contract involving changes to the statement of work, PWS, or scope of work requirements. Ensure cost estimates are included.
18.1.1.1.14.1.3. (Added) Changes to the award fee plan.
18.1.1.1.14.1.4. (Added) Locally procured maintenance/service contracts.
18.1.1.1.14.1.5. (Added) PWS/Statements of work (SOW) for all aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities maintenance/service contracts (includes transient alert contracts) covered in Added paragraph 18.
18.1.1.1.14.1.6. (Added) Contractor proposals to new or revised DOD, Air Force, MAJCOM, and local directives.
18.1.1.1.15. (Added) Coordinate waiver requests with the MAJCOM/A4 staff when initiated by the contractor, MEO, or HPO.

18.1.1.1.16. (Added) Ensure performance-based contract assessment tools (e.g. process and systems audits, compliance checklists, random sampling or other frequency-based inspection methods, etc.) are used to maximum extent possible monitor contractor, MEO, or HPO submission of required reports according to the contract Section C, PWS/SOW, requirements document, management plan, AFI, or MAJCOM publication.
18.1.1.1.17. (Added) Ensure surveillance methods to monitor contractor, MEO, or HPO performance IAW federal, state, and local environmental laws and AF directives.
18.1.1.1.18. (Added) Ensure contracts contain a viable contingency plan for tasks identified as essential IAW DoDI 3020.37, <i>Continuation of Essential DoD Contractor Services During Crisis</i> , and annually coordinate with PMO and PCO/ACO to revise, update, or change it.
18.1.1.1.19. (Added) Establish procedures for technical evaluation of contractor-submitted value engineering change proposals (if applicable).
18.1.1.1.20. (Added) Submit surveillance schedules IAW guidance of PMAP or performance plan to FC/FD for approval.
18.1.1.1.21. (Added) Review publications for acceptance (when contractor generated) (e.g., wing-level instructions and group OIs) developed by the performance-based activity (contractor, MEO, or HPO) prior to final signature and implementation.
18.1.1.1.22. (Added) Establish a standard format for the monthly surveillance summary report.
18.1.1.1.23. (Added) will provide Government vehicles for centrally located CORs. CORs must have transportation to and from the contractor's location in order to provide timely support.
18.2.1. (Added) Facilities. When performance-based activity (contractor, MEO, and HPO) performance is required on base, then facilities are government owned and contractor operated (GOCO). When performance is required off base, then facilities are contractor owned and contractor operated (COCO).
18.3.2. (Added) Financial Management. The PMO shall annually (usually in March) ensure that the MAJCOM/FM Budget Office includes contract funding requirements in the FYDP. The PMO shall identify MEO and HPO personnel requirements for inclusion in the FYDP. Also, the PMO shall establish procedures to collect reimbursements when a performance-based activity (contractor, MEO, or HPO) provides support as a support agreement supplier (host).
18.3.3. (Added) Support Agreement Management. See AFI 25-201. Performance-based activities (contractor, MEO, and HPO) cannot negotiate and sign support agreements. The PMO shall negotiate, coordinate and control support agreements for supported workloads. MEOs and HPOs are authorized to negotiate, coordinate, and control support agreements pertinent to their functional area, but shall not without written approval of the government program management

office.
18.3.4. (Added) Change Management for Performance-Based Activities (contract, MEO, and HPO). See FAR for contracts. The PMO is the OCR for issuing and identifying the need for contract modifications. The government program management office is the OPR for changing MEO and HPO management plans.
18.5.2.1. (Added) The PP implements the requirements of applicable guidance and this chapter.
18.5.4.1. (Added) Related documents include:
18.5.4.1.1. (Added) Intent or consideration to default or re-compete the contract prior to the scheduled recompetition.
18.5.4.1.2. (Added) Modifications to the contract involving changes to the statement of work or scope of work requirements. Ensure cost estimates are included.
18.5.4.1.3. (Added) Changes to the award fee plan. (If applicable)
18.5.4.1.4. (Added) Locally procured maintenance service contracts.
18.5.4.1.5. (Added) PWS/Statements of work (SOW) for all aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities maintenance/service contracts (includes transient alert contracts) covered in Added paragraph 18.
18.5.4.1.6. (Added) Contractor proposals to new or revised DoD, Air Force, MAJCOM, and local directives.
18.5.5. Coordinate waiver requests with the HQ AFMC/A4 staff through the appropriate chain of command when initiated by the contractor, MEO, or HPO.
18.5.7. Comply with all requirements
18.5.11. PMO will determine procedures to nominate CORs for CLS/CFT contracts and all service contracts over SAT. Chief COR has the authority to reject nominations (not technically qualified).
18.5.15. Include performance status of contract activities in maintenance management meetings.
18.5.16. (Added) Ensure the appropriate functional reviews (i.e. Safety, Bioenvironmental, etc.) have been performed on the PWS/SOW prior to submission of the requirements package to contracting.

18.5.17. (Added) Pre-Contract Award and Pre-Planning for Management Plan Requirements. The requirements of this paragraph are applicable solely to the functional commander/functional director (FC/FD). These requirements shall be considered for incorporation into all solicitations, initial and follow-on (e.g., recompetitions), and MEO/HPO management plans containing maintenance functions. The guidance in this paragraph is authoritative, but not directive except where noted as mandatory because of Public Law, executive orders, DOD directives, or AFIs. Existing contracts need not change until recompetition of the function.
18.5.18. (Added) Contract / MEO / HPO Documentation.
18.5.18.1. (Added) Contract Format. The procuring contracting officer (PCO) is the OPR for contract preparation. The Uniform Contract format has 13 sections, alphabetized from A to M. The maintainer's primary concern will be with Section C, <i>Description/Specification/Statement of Work</i> , because this section details the service (outputs) the offeror is required to perform and the go/no-go checklist (services summary (SS)) for accepting the service (outputs). The FC/FD is the OPR for Section C and the SS.
18.5.18.2. (Added) MEO Format. See AFI 38-203.
18.5.18.3. (Added) HPO Format. Use same format as the MEO management plan, see AFI 38-203.
18.5.18.4. (Added) Solicitation, MEO, and HPO Provisions.
18.5.18.4.1. (Added) Applicability of AFIs and TOs. The Section C, PWS/SOW, requirements document and HPO management plan shall include AFI and TO requirements. TOs are mandatory and will be cited in their entirety. Cite mandatory AFI paragraph(s) or cut and paste text from the AFI into the Section C, PWS/SOW requirements document and HPO management plan. Contact MAJCOM/A4 staff and HQ USAF/A4LM, in turn, for assistance when there is disagreement over applicability and use of TOs or 21-Series AFIs.
18.5.18.4.2. (Added) Contractors performing operations covered by this instruction on or using government resources shall meet the intent of applicable portions of AFI 21-101. As a minimum, the following programs will be addressed in the PWS/SOW: tool control, documentation, FOD prevention, and materiel control and equipment management. It is important to consider the full scope of contracted operations as this attachment may not identify all necessary standards to be considered or may contain standards that are not part of the contracted operations.
18.5.18.4.3. (Added) Contract Data Requirements. The Section C, PWS/SOW requirements document and HPO management plan shall not require data deliverables except when required IAW an AFI or TO. Data deliverables created as a natural consequence of complying with AFIs or TOs shall not be cited in a contract data requirements list (CDRL) or contract line item number. For example, report data collected IAW an AFI or TO and documented on the appropriate AF Form/IMT or equivalent.

18.5.18.4.4. (Added) Support Agreements. The Section C technical exhibits and HPO management plan shall include workload requirements supported via support agreement (see AFI 25-201).
18.5.18.4.5. (Added) Organization. Contractors and MEOs are exempt IAW AFI 38-203 from organizing their operations as defined in AFI 38-101; however, the Section C PWS/SOW requirements document shall include a requirement mandating use of the AF standardized mailing address format (e.g., 412 CMS/MXMD) to facilitate uniform communication between organic and non-organic activities. HPOs opting not to comply with AFI 38-101 shall submit a waiver request through their MXG/CC, WG/CC, and MAJCOM/A1M/to HQ USAF/A1M.
18.5.18.5. (Added) Review documents related to default/re-compete prior to scheduled recompetition; contract Section C , PWS/SOW, requirements document or scope of work modifications; changes to award fee plan (if applicable); contractor, MEO, or HPO proposals to new or revised DoD, AF, MAJCOM, and local directives.
18.6.1.3. There will be Primary and Alternate COR for each contract IAW FAR.
18.6.1.4. PMO will determine fill requirements.
18.6.1.5. Chief COR has the authority to reject nomination but must notify FC/FD in writing the rejection justification and maintain on file.
18.6.1.7. Chief COR ensures the development of schedule. Copies of all schedules may be kept on file electronically in a data base.
18.6.1.15.1. (Added) Develop a COR Training Program (Sign in Rosters for the training is maintained by the Chief COR) along with master training plan for CORs and individual training records with AF Form 797 to document technical training, evaluator training, and ancillary required training.
18.6.1.18. (Added) Serve on the Multi-Functional Team (MFT) to ensure Section C PWS/SOW requirements documents and Performance Plan are properly developed utilizing the SMART Concept.
18.7.1.8. Report findings to PMO for coordination, through CO prior to forwarding to MAJCOM. (When applicable)
18.7.1.10.1. (Added) Serve as a member of the multi-function team when required.
18.7.1.11.1. (Added) COR will deliver schedule to Chief COR for distribution.
18.8.1.1. The program manager, Chief COR, COR will complete the AFMC developed COR training requirements. This training will be developed at a later date, and in the interim, the

AETC Quality Assurance Evaluator Course may be attended on a space available basis.
18.8.2. CORs and Chief CORs must complete training IAW AFFARS MP 5301.602-2(d). HQ AFMC/A4US will develop a standard MAJCOM general COR training course at a later date. In the interim training IAW AFFARS MP 5301.602-2(d) will continue to be provided by the local QAPC. Additionally, it is highly recommended that CORs and Chief CORs complete the AETC Quality Assurance Evaluator Course. Completion of this course fulfills requirement. COR Chiefs are also highly encouraged to complete the AETC Chief COR and Superintendent Course (until AFMC courses become available at a later date yet to be determined). Once AFMC Chief COR and FC/FD courses are developed and taught, these courses will become mandatory.
18.8.3. CORs, Chief CORs and FC/FDs must complete training IAW AFFARS MP 5301.602-2(d).
18.8.4.1. HQ AFMC/A4US will facilitate development of standard MAJCOM initial and refresher general COR training courses at a later date.
18.8.9.1. (Added) HQ AFMC/A4US will facilitate development of a standard MAJCOM general COR training course at a later date. Completion of the AETC Functional Commander Executive Training Session is highly recommended for FC/FDs
18.11.3. Observation Area inspections will be accomplished at least annually and listed on the monthly schedule. Requirements will be coordinated/determined by the PMO.
18.14.1. (Added) MAJCOM will determine content, format and routing.
18.15. If not specified in the contract, corrective action request (CAR) reporting forms will be determined by the PMO.
18.19.1. (Added) Also follow FAR Part 37 with regards to Transition Plans.

ATTACHMENT 14 (Added)

AIR LOGISTICS CENTER (ALC)/DEPOT

A14.1. (Added) Table A14.1. (Added) prescribes ALC/Depot guidance and procedures. The chapters and paragraph numbers in **Table A14.1.** coincide with, or add supplemental guidance, and must be used in conjunction with AFI 21-101. Throughout this Table the civilian equivalent (unless no civilian may hold the position) may be applied to any reference to a military rank, grade or position. (DEV) – The following chapters in AFI 21-101 do not apply to ALC's/Depot's; **Chapter 4, Chapter 5, Chapter 6, Chapter 7** (except for AFMC added **Chapter 7** in **Attachment 14 Table A14.1.**), **Chapter 11** (except for AFMC added **Chapter 11** in **Attachment 14 Table A14.1.**), **Chapter 12, Chapter 13** and **Chapter 16.**

Table A14.1. (Added) ALC/DEPOT MAINTENANCE MANAGEMENT

ALC/DEPOT
Chapter 1 - MANAGEMENT PHILOSOPHY AND POLICY
<p>1.1. Introduction. This section of the supplement covers only depot maintenance organizations that accomplish depot maintenance (organic) and those organizations that arrange for the accomplishment of depot maintenance (either organically or via contract). These organizations may be part of the Air Logistics Centers' (ALC) structure or other specialized groups or units under AFMC (e.g., AFGLSC). It excludes maintenance activities of tenant organizations located on an ALC not assigned to AFMC or organizations under the Combat Wing Organization/Non-Standard Organization (CWO/NSO) constructs. It is focused on prescribing basic aircraft and equipment depot maintenance policy used throughout the AFMC depot Maintenance Wings (MXWs) and other depot maintenance operations within the Command. Any deviations from this guidance are prohibited without HQ AFMC review and HQ USAF/A4L waiver/variance approval.</p>
<p>1.1.1. (Added) Management Philosophy. The Air Force requires depot maintenance capability to support and sustain air, space, and cyberspace assets. AFMC is committed to sustaining a modern, technically proficient and responsive depot structure. AFMC's depot maintenance philosophy is to provide focused support to the warfighter through integrated use of public and private sector capabilities; maintain infrastructure investments at a sustained level; continue to invest in organic depot maintenance human capital to retain a professional work force; exploit the use of state-of-the art technology and drive continuous process improvements to improve efficiency, reduce costs while improving product and process quality. The management philosophy is to accomplish depot maintenance in the most efficient and effective manner with right mix of capability, skills, facilities and equipment; and ensure that products and services meet quality, schedule and cost. Further, accomplishment of depot maintenance will reflect strict environmental practices, attention to safety and quality of life for all employees.</p>
<p>1.1.1.1. (Added) Depot maintenance will strive to meet schedule, cost and quality of the products and services it delivers. It will ensure that Operational Safety, Suitability and Effectiveness (OSS&E) is achieved. Depot maintenance will invest in the resources (skills,</p>

training, facilities and equipment) necessary to accomplish its mission in line with operational customer requirements and with an overarching awareness of the systems and technologies being acquired for future needs.

1.2. Organization. AFMC depot Maintenance Wings will organize according to AFI 38-101, *AF Organization*, or as authorized by HQ USAF/A1M. AFI 21-101 authorizes civil service maintenance functions to deviate from AFI 38-101, and it should be used as the basis for organizational design. Contractor depot maintenance functions are not required to organize in accordance with (IAW) AFI 38-101, but will implement the organization as outlined in their proposal as accepted by the government.

1.2.1. **(Added)** In the event an intermediate repair activity is established at an ALC, the affected MXW Commander/Civilian Leader may request authorization (via a waiver request) for the intermediate repair activity organization to operate under the Combat Wing Organization (CWO) guidance outlined in AFI 21-101. Waiver requests must be coordinated through the applicable MXW Commander and routed through HQ AFMC/A4 Workflow to HQ AFMC/A4M for coordination within HQ AFMC and final approval by HQ AFMC/A4. If this option is approved, the affected unit must comply with all CWO requirements as outlined in AFI 21-101.

1.3. Aircraft and Equipment Readiness. As a contributor to aircraft and equipment readiness, the functional definition of depot maintenance is: maintenance performed on materiel requiring major overhaul or a complete rebuild of parts, assemblies, subassemblies, and end-items, including the manufacture of parts, modifications, testing, and reclamation as required. Depot maintenance serves to support lower categories of maintenance by providing technical assistance, TO 00-25-107, *Maintenance Assistance*, and performing maintenance beyond the responsibility of lower categories of maintenance activities. Depot maintenance provides stocks of serviceable equipment by using more extensive facilities for repair than are available in lower level maintenance activities. The depot maintenance function ensures aircraft and equipment are safe, serviceable, and properly configured to meet mission needs. Depot maintenance actions include, but are not limited to; inspection, repair, overhaul, modification, preservation, refurbishment, troubleshooting, testing, and analyzing condition and performance. All levels of supervision must place emphasis on safety, quality, and timeliness in the performance of depot maintenance. The concept of quality depot maintenance must be fostered by each supervisor and technician to ensure the integrity and skill of each maintainer is not degraded. To the greatest extent possible, depot maintenance is accomplished on a preplanned scheduled basis. Planning provides the most effective and efficient use of people, facilities, and equipment, reduces unscheduled maintenance, and allows for progressive actions toward maintaining and returning aircraft and equipment to safe operating condition.

1.3.1. **Preventive Maintenance.** Depot maintenance organizations must implement and manage the tasks specified in the scheduled program for aircraft, equipment, components, commodities and associated support equipment (SE) that are accomplished by the depot.

1.3.3. **(Added)** A key management philosophy is to employ critical safety item (CSI) tenets to production processes and assure compliance to Aviation Critical Safety Items Management Handbook on components/systems/equipment as defined by SPO/SPM Chief Engineers.

Production leadership and planners shall ensure technical information (WCD flows, process orders, process sheets, etc.) formulated internal to the MXW that affects CSI tenets, is approved by the lead process technical expert, as appointed and assigned by the MXW/EN as well as the SPO/SPM Chief Engineer, prior to use/change/modification. This shall provide assurances that stipulated OSS&E are met.

1.4. Maintenance Concept. Depot maintenance, both functionally and physically, is part of the Repair Network.

1.4.1. Requests For Assistance (RFA). If a depot maintenance activity receives a request for assistance for evaluation and/or repair beyond unit capability, the request must be made IAW AFI 21-103, *Equipment Inventory, Status And Utilization Reporting*, TO 00-25-107, *Maintenance Assistance*, and TO 00-20-14, *AF Metrology and Calibration Program*, or automated process as approved by the mission design series (MDS) specific system manager. Depot maintenance responses to requests for assistance must be coordinated through the appropriate cognizant engineer.

1.4.2. **(Added)** Repair Network. The ALCs and MXWs shall support the development and implementation of the Repair Network Integration (RNI). The Air Force Repair Network is organized into four hierarchal levels; repair enterprise, product repair groups, repair networks and repair nodes. A repair network is a collection of repair nodes within product repair groups that support the repair enterprise. The management of the repair network is comprised of the Repair Network Manager (RNM) (who may reside in the ALC ASD organization) whose role is to oversee and manage a collection of repair nodes within a specific product repair group. Node Managers will reside within the MXW's for all maintenance managed within the depots.

1.4.2.1. **(Added)** Repair Node. The Air Force Repair Node level is an individual organizational unit within repair network(s). The role of the Node Manager is to oversee and manage all shop activities pertaining to a specific Repair Node. The Node Manager shall:

1.4.2.1.1. **(Added)** Collect Repair Node Capability and Capacity (CAP2) data. The Node Manager will also develop Production Plans to support RNM Workload Plans. The Production Plan shall be provided to the RNM annually and when adjustments are made to the current plan. The Node Manager will Provide the RNM with updates to CAP2 IAW workload allocation plans and ensure data accuracy.

1.4.2.1.2. **(Added)** Manage Repair Node operations to support approved performance goals. The Node Manager shall adjust Repair Node operations as required to meet performance goals. The Node Manager will communicate production deviations which exceed agreed upon upper or lower limits to RNM and chain-of-command. The Node Manager will provide mitigation strategy to address negative performance deviations. The Node Manager will communicate technical requirement changes via established processes to RNM and engineering as they become known.

1.4.2.1.3. **(Added)** Execute Shaping and Sizing actions as defined in the approved Network Shaping and Sizing Plan as approved by the governance structure. (Shaping and Sizing is a

process for recommending a rational structuring of the Air Force's capability and capacity (manpower and infrastructure) to ensure an appropriate amount exists based on current and future mission objectives.)
1.4.2.1.4. (Added) Ensure squadron/group/wing leadership has access to and/or is aware of all communication exchanges with MAJCOMs and RNMs with regard to RNI processes, CAP2 data inputs and workload allocation changes/plans.
1.4.2.1.5. (Added) Participate in CPI activities, and share results with RNM.
1.4.3. (Added) Depot Maintenance Concept. The concept of AFMC depot maintenance is to provide quality, on-time and within cost depot level products and services of aerospace equipment to its customers. The products and services will fully comply with technical data requirements and meet OSS&E criteria. AFMC will use disciplined engineering practices, strictly adhere to technical data, develop and sustain well-trained and motivated depot workforce, use the correct tools and equipment, maintain a quality work environment and use strictly disciplined processes. To further complement the intent of AFI 21-101, MXWs should pursue industry standards to achieve quality and cost effective production (e.g., ISO9000).
1.7. Publications. ALC/MXWs will supplement this AFMC Supplement Depot Section with local publications. Each MXW must tailor procedures to the unique aspects of its own depot maintenance operations and publish directives for areas where more detailed guidance or specific procedures will enhance operations. (The term "directives" includes instructions, supplements, and, for functional areas, operating instructions IAW AFI 33-360, <i>Publication and Forms Management</i> .) MXWs shall adhere to paragraphs 1.7.1 through 1.7.7 of AFI 21-101.
1.8. Waiver Request. The Maintenance Wing Commander/Director or Deputy, or equivalent will coordinate on waiver requests to this instruction. Any activity that intends to deviate from requirements in this instruction must submit a formal request to HQ AFMC/A4 using the format in Attachment 10 , AFI21-101. Send waiver requests to afmc.a4.workflow@wpafb.af.mil (AFMC/A4 Workflow) or mail to HQ AFMC/A4, 4375 Chidlaw Rd, Bldg 262 WPAFB OH 45433-5006. If HQ AFMC/A4 approves, it is obligated to submit the waiver request to HQ USAF/A4.
1.9. Field Supplements/Installation Publications ALC/MXW publications will assign responsibilities, direct actions, and prescribe detailed procedures within a single subordinate function (i.e., a staff office/section, a flight/branch, a squadron/division, etc.).
1.10.1.8. (Added) HQ AFMC/A4 is designated as the focal point for the Contract Depot Maintenance (CDM) Program, the Contract Maintenance Program for Depot Maintenance Activity (DMAG) and Contract Field Team (CFT) Program. HQ AFMC/A4D shall develop and implement policy/procedures for overall management of these programs. Policy/procedures for these programs are contained in AFMCI 21-149, <i>Contract Depot Maintenance (CDM) Program</i> , AFMCI 21-113, <i>Contract Maintenance Program for Depot Maintenance Activity (DMAG)</i> , and AFMCI 21-141, <i>Contract Field Team (CFT) Program</i> . Paragraphs 1.10.1.2 through 1.10.1.7 of

AFI 21-101 apply.
1.10.2.5. (Added) AFMC Centers (including AFGLSC) shall comply with AFMCI 21-149, <i>Contract Depot Maintenance (CDM) Program</i> , AFMCI 21-113, <i>Contract Maintenance Program for Depot Maintenance Activity (DMAG,)</i> , and AFMCI 21-141, <i>Contract Field Team (CFT) Program</i> . Paragraphs 1.10.2.1 through 1.10.2.4 of AFI 21-101 as applicable.
1.10.3. (Added) Other Contract Depot Maintenance. Depot-level maintenance is also accomplished via contracts that do not fall under the CDM Program, the CDMAG Program and CFT Program and their respective AFMCIs. These contracts are typically part of Contract Logistics Support (CLS) or Interim Contract Support (ICS) contracts established by program offices. Reference AFI 63-101, <i>Acquisition and Sustainment Life Cycle Management</i> .
1.12. Maintenance Information Systems (MIS). MIS systems are clearly defined in TOs 00-20-1, <i>Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures</i> , 00-20-2, <i>Maintenance Data Documentation</i> , and 00-20-3, <i>Maintenance Processing Of Repairable Property and the Repair Cycle Asset Control System</i> . Non-maintenance systems are considered management information systems which follow separate guidelines under separate AFIs.
1.13. Communications. Effective depot maintenance requires efficient communication. Unit commanders shall develop communication plans according to mission, security and information assurance requirements.
1.13.1. Restrictions on carrying cell phones, radios, etc. apply to all persons working in a critical foreign object damage (FOD) area, including mechanics, inspectors and all other persons in the immediate area. Critical FOD potential areas include cockpits, flight controls, fuel cells and other areas identified by the FOD Prevention Committee. Disputes regarding what constitutes a FOD critical area will be resolved by the FOD Prevention Committee. Devices prohibited from such areas may be stored in personal lockers or personal drawers. Prohibited items do not include boom boxes, stereos and other sizable devices that do not pose a FOD risk. Prohibited devices may be carried and used in the personal lock/drawer areas, rest areas and other areas sufficiently removed from the FOD critical area.
1.13.1.1. (Added) Use of personal cell phone or communication devices is authorized in the industrial/production areas except while performing hands-on maintenance activities. Employees will remove themselves from any maintenance activity, aircraft, or high traffic areas prior to using a communication device.
1.13.1.2. (Added) Use of portable music/video players (boom boxes, stereos and other sizable devices), electronic games or other personal electronic hearing impairing devices is authorized in industrial production areas except where audio warning cues are used.
1.14.2. MXW/CCs may waive duty shifts and rest period provisions during emergencies and advanced readiness conditions.

1.15. Maintenance Training. MXWs will ensure depot maintenance training provides initial, recurring and advanced proficiency, qualification, or certification skills needed by a technician to perform duties in their primary series. The overall capability of a unit depends on the state of training for maintenance personnel. Training is essential to improving and sustaining unit capability and is one of the most important responsibilities of commanders and supervisors. Commanders and supervisors must give priority support to training. When balancing resources, (e.g., aircraft, support equipment, facilities, tools, funding, personnel), maintenance training carries an equal priority with the production workload. For depot maintenance training policy and guidance, refer to AFI 36-2232, *Maintenance Training* and **Chapter 14** of this instruction.

1.15.1. Cross-Utilization Training (CUT). CUT is not used in the AFMC/MXWs. MXWs shall utilize multi-skilling as applicable and appropriate based on local preferences, needs and labor union considerations.

1.15.4. **(Added)** Depot Maintenance Training and Civilian Training. MXWs will ensure training requirements are executed to support established training plan and individual Civilian Training Plans and AFSC Career Field Education and Training Plans (CFETP). Ensure all personnel complete the shop level Pollution Prevention (P2) Training Program and the Environment, Safety and Occupational Health Management System (ESOHMS) training requirements as applicable.

1.15.4.1. **(Added)** Air Logistics Centers Maintenance Wings are the Offices of Primary Responsibility for the Depot Maintenance Training Program. A Maintenance Training Flight (MTF) shall be established at the Wing Level. The Maintenance Wing Commander will appoint in writing a Wing Maintenance Training Manager, Wing Civilian Training Plan Manager, Wing Production Acceptance Certification (PAC) Program Manager, Wing Courseware Program Manager, Wing Training Systems Program Manager, and other officials deemed necessary to effectively develop, implement, and manage the Depot Maintenance Training and PAC Programs at the Maintenance Wing. These positions will be assigned to the Wing MTF. The Wing PAC Program Manager duties are defined in **Chapter 14**.

1.15.5. **(Added)** Work Center Training. MXWs will develop work center training requirements. Assigned personnel will be evaluated and a determination of their individual training needs will be accomplished. Training requirements will be tracked and personnel will attend required training on time. MXWs will ensure training documentation is accurate. When applicable, ensure Air Education Training Command (AETC)-developed training materials are used to supplement qualification training.

1.15.6. **(Added)** Information Systems Training. MXWs will ensure that depot maintenance personnel are trained on maintenance and/or supply information systems, or other management information systems required to support the depot maintenance function and as required for job performance of the individual.

1.22. (Added) Continuous Process Improvement. Depot Maintenance managers at all levels should apply Air Force Smart Operations 21st Century (AFSO21) principles to their work activities. The goal of AFSO21 is to improve processes and eliminate wasted efforts that add no

value to mission accomplishment. Reference AFMCI 90-104, <i>Implementing AFSO21 Initiatives</i> .
1.22.1. (Added) Managers at all levels will apply Voluntary Protection Program (VPP) principles to their work activities.
1.23. (Added) MXW Metrics and Reporting. The MXWs will develop and provide metrics and reports to higher headquarters as requested. The broad metrics areas include, but are not limited to; Functional Check Flight performance, financial, production, quality, manpower, training, capacity, capability and infrastructure. Each of these broad categories may contain significant numbers of sub-metrics that are useful for MXW depot operations and may also be requested. Standard metrics across all MXWs will be directed as needed in specific data calls and guidance from higher headquarters.
1.24. (Added) Nuclear Weapons Related Materiel. The accomplishment of depot maintenance on NWRM items, whether at organic or contract (commercial) sites will comply with AFI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> and AFMCI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> , AFMC Sup.
Chapter 2 - SAFETY
This section intentionally left blank. No supplemental data necessary.
Chapter 3 - GENERAL RESPONSIBILITIES FOR COMMANDERS AND KEY LEADERS
3.1. General. Depot maintenance at an ALC does not follow the CWO structure resident in the parent instruction. Accordingly, general responsibilities for commanders and key leaders are assigned at the appropriate or equivalent level. ALC Commanders, Depot Maintenance (DM) Commanders and key leaders involved in depot maintenance activities are identified where applicable. For the purpose of this instruction, in units where there is not a MXW/CC/CL/CD responsible for depot maintenance, the applicable civilian director of maintenance (DOM) will ensure compliance with all responsibilities in this instruction. Not all levels of responsibility follow the same naming convention, nor do they apply universally across the AFMC/MXWs.
3.1.1. (Added) Grade/Skill Level Equivalents. Military rank to contractor equivalents are not applicable in the MXWs. AFMC will determine grade/skill level equivalents for civilians.
3.1.2. (Added) ALC Commander/Director Responsibilities:
3.1.2.1. (Added) Ensure USAF and AFMC DM guidance is effectively implemented in all affected Center DM organizations.
3.1.2.2. (Added) Ensure effective management of the Center's maintenance training program IAW AFI 36-2201 series, AFI 36-2232, <i>Maintenance Training</i> , and Chapter 14 of this instruction. Provides aircraft, personnel, and equipment to support the maintenance-training program.

3.1.2.3. (Added) Ensure AFSO21 and continuous process improvement activities are conducted in all DM units; ensure improvement results are appropriately implemented and measured.
3.1.2.4. (Added) Ensure an effective Crash Damaged or Disabled Aircraft Recovery (CDDAR) capability is in place. Publishes a Center OI containing specific responsibilities for all applicable base agencies.
3.1.2.5. (Added) Ensure the accomplishment of depot maintenance on Nuclear Weapons Related Materiel (NWRM) items complies with AFI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> and AFMCI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> , AFMC Sup.
3.1.2.6. (Added) Establish a self-inspection program IAW AFI 90-201AFMC Sup 1, <i>Inspector General Activities</i> and this instruction.
3.1.3. (Added) Air Logistics Centers' Vice Commander/Director (ALC CV/DV) Responsibilities. In addition to other duties as assigned by the ALC CC/CL, the ALC CV/DV will:
3.1.3.1. (Added) Manage the Foreign Object Damage (FOD) Program. The ALC/CV/DV is the FOD Prevention Program Manager and appoints a qualified technical sergeant (or above), civilian equivalent, or contractor if designated by performance work statement, as the FOD Prevention Monitor IAW Chapter 14 of this instruction.
3.1.3.2. (Added) Manage the Dropped Object Prevention (DOP) Program. The ALC/CV/DV is the DOP Program Manager and appoints a qualified individual as the DOP Program Monitor IAW Chapter 14 of this instruction.
3.1.3.3. (Added) Ensure the accomplishment of depot maintenance on Nuclear Weapons Related Materiel (NWRM) items complies with AFI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> and AFMCI20-110, <i>Nuclear Weapons-Related Materiel Management</i> , AFMC Sup.
3.2. Maintenance Wing Commanders (MXW/CC/CL/CD) Responsibilities. The MXW/CC/CL/CD is responsible for all aspects of MXW DM activities. Allocates resources to meet production requirements and to support process improvement activities. Reports as required to the Center Commander and higher headquarters on DM activities. Also responsible for materiel management functions assigned to their organizations. Ensures maintenance requirements and programs in Chapter 14 of this instruction are complied with. The MXW/CC may deviate from organizing IAW AFI 38-101 as the MXW is a civil service maintenance function. See Chapter 1 .
3.2.1. Conducts "Wing Standup" meetings as needed or as required to suit management needs to understand and resolve the depot maintenance mission accomplishment. The meeting will focus on identifying and resolving issues with executing the production schedule, quality issues and cost issues.

DEV 3.2.4. Not applicable to AFMC/MXWs.
DEV 3.2.5. Not applicable to AFMC/MXWs.
DEV 3.2.7. Not applicable to AFMC/MXWs.
3.2.8. (Added) Ensure maintenance and supply information systems are effectively deployed and utilized in their organizations.
3.2.9. (Added) Ensures DM is documented IAW 00-series TOs, Air Force, AFMC, and local guidance.
3.2.10. (Added) Ensures DM personnel are properly trained, qualified, and/or certified.
3.2.11. (Added) Ensures standardization of DM discipline, procedures, organizational structures, compliance, and management philosophy.
3.2.12. (Added) Oversees the development and publication of all depot maintenance- related OIs.
3.2.13. (Added) Complies with Maintenance Standardization and Evaluation Program (MSEP) requirements in paragraph 8.10. of this instruction.
3.2.14. (Added) Establish a self-inspection program IAW AFI 90-201 AFMC Sup 1, <i>Inspector General Activities</i> and this instruction.
3.2.15. (Added) Ensure oversight for all contract maintenance performed IAW Chapter 18 of this instruction.
3.2.16. (Added) Ensure annual inventory of all AGE maintained in the MXW is submitted to AFMC/A4MM AGE functional manager. The list will be by NSN and will include all supply requisitions.
3.2.17. (Added) Ensure the accomplishment of depot maintenance on Nuclear Weapons Related Materiel (NWRM) items complies with AFI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> and AFI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> , AFMC Sup 1.
3.2.18. (Added) Develop a 10-year facility plan specifying maintenance, upgrade, and replacement projections for the group's facilities. Update and coordinate this plan with the base Civil Engineer annually. Coordinate and prioritize group maintenance facility work orders monthly.
3.4. Group Commander/Director/Deputy (MXG/CC/CL/DD) Responsibilities. Responsible for implementing applicable USAF, AFMC, and local DM guidance. Group

Commanders/Directors (or equivalent) ensure additional maintenance requirements and programs in Chapter 14 of this instruction are complied with. The Group Commander/Director will support Center and Wing Commander/Director responsibilities.
3.4.1.2.1. (Added) Ensures fire extinguisher, hazard communication (HAZCOM), and appropriate ancillary training programs are established for personnel performing DM. Ensure all occupational health requirements are documented IAW AFI 91-202, <i>The US Air Force Mishap prevention Program</i> .
3.4.1.2.2. (Added) Institutionalize Operational Risk Management (ORM) within the workplace. Identify, eliminate or control, and document hazards to minimize risks IAW AFI 90-901, <i>Operational Risk Management Program</i> .
3.4.1.2.3. (Added) Ensures compliance with all applicable Air Force Occupational Safety and Health Standards (AFOSHSTDs) and Mishap Prevention Program IAW AFI 91-202, <i>The US Air Force Mishap Prevention Program</i> .
3.4.1.2.4. (Added) Ensures organizational compliance with all Federal, State and local laws pertaining to environmental regulations and pollution prevention. Ensures a focal point is identified as the group environmental coordinator for environmental compliance. Refer to AFD 90-8, <i>Environment, Safety, and Occupational Health</i> , AFI 32-7080, <i>Pollution Prevention Program</i> , and AFI32-7086, <i>Hazardous Materials Management</i> , for additional guidance.
3.4.1.3. Ensures publication libraries or publication sets, including TOs are established as required to support DM. In conjunction with EN and SC, ensures there are contingency plans in place when electronic technical data and publications are not available.
3.4.1.4. Ensures PAC procedures are followed IAW Chapter 14 of this instruction.
DEV 3.4.1.7. Not applicable.
DEV 3.4.1.9. Not applicable.
DEV 3.4.1.11. through 3.4.1.12. Not applicable.
3.4.1.13. Munitions Flight Commander/Chief or equivalent. Applicable only to MXWs with depot maintenance munitions mission.
3.4.1.16. If applicable.
DEV 3.4.1.18. Not applicable.
3.4.1.19. Applicable only to MXWs with depot maintenance munitions mission.
DEV 3.4.1.23. through 3.4.1.24. Not applicable.

DEV 3.4.1.27.1. Not applicable.
3.4.1.29. CDDAR is an Air Base Wing function augmented by the MXWs. MXWs shall augment as required.
3.4.1.33. There are no AFETs or CETs at ALCs. MXGs shall ensure effective use of equivalent functional capabilities resident at the ALCs.
DEV 3.4.1.40. Not applicable.
3.4.1.41. In addition to parent AFI requirements, as a minimum additional topics must include local bargaining agreements and Chapter 14 of this instruction, as applicable.
3.4.1.43. The link for the Propulsion Center of Excellence is https://cs.eis.afmc.af.mil/sites/Propulsion/PCOE/default.aspx .
DEV 3.4.1.46. Not applicable.
DEV 3.4.1.48. Not applicable. This is a responsibility of the MXG/CC IAW Chapter 21 (Added) .
3.4.1.49. If applicable.
DEV 3.4.1.50 through 3.4.1.51. Not applicable.
DEV 3.4.1.54. through 3.4.1.55. Not applicable.
3.4.1.57. MXG shall ensure FCFs are accomplished by the 413th FTW per MOA. MXG/CC shall follow established FCF procedures for aircraft. FCFs are a Production Squadron Responsibility in conjunction with the Test Flight Organization.
DEV 3.4.1.58. Not applicable.
DEV 3.4.1.60. through 3.4.1.60.7 Not applicable.
DEV 3.4.1.61. Applicable to AMXG only.
DEV 3.4.1.62. through 3.4.1.63. Not applicable.
DEV 3.4.1.65. Not applicable.
DEV 3.4.1.69. Not applicable.
DEV 3.4.1.71. Not applicable.

3.4.1.72. (Added) Ensures manpower and all levels of supervision are equitably distributed for all DM duty periods based on manning and workload.
3.4.1.73. (Added) Ensures maintenance work schedules (days on/off and shift length) are established to consider local environmental conditions (heat/cold) for the safety and health of the assigned personnel.
3.4.1.74. (Added) Ensure the accomplishment of depot maintenance on Nuclear Weapons Related Materiel (NWRM) items complies with AFI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> and AFMCI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> , AFMC Sup.
3.4.1.75. (Added) Enforces the QA program per Chapter 8 to ensure standardized inspection and maintenance procedures.
3.4.1.76. (Added) Establish/define responsibilities and interface between Procedures and Analysis Elements and QA.
3.4.1.77. (Added) Establish minimum levels for essential maintenance assets to include aircraft, engines, pods, AGE, vehicles, etc.
3.4.1.78. (Added) Conducts meetings to establish game plans and priorities at the beginning of exercises and contingencies.
3.4.1.79. (Added) Implement an effective structural maintenance program IAW AFI 21-105, <i>Air and Space Equipment Structural Maintenance</i> .
3.4.1.80. (Added) Ensure Squadron Directors and supervisors at all levels support the Vehicle Management Program, ensuring compliance with the provisions of AFI 24-302, <i>Vehicle Management</i> , and AFPAM 24-317, <i>Vehicle Control</i> .
3.4.1.81. (Added) Ensure the financial program is managed IAW AFI 65-601, <i>Budget Guidance and Procedures</i> and DODFMR 7000.14, <i>Financial Management Regulation</i> .
3.4.1.82. (Added) Ensures compliance with impoundment requirements IAW Chapter 9 of this instruction.
3.4.1.83. (Added) Ensures a records management program is established according to AFI 37-138, <i>Records Disposition-Procedures and Responsibilities</i> , AFMAN 33-363, <i>Management of Records</i> .
3.4.1.84. (Added) Ensures a self-inspection program IAW AFI 90-201 AFMC Sup-1, <i>Inspector General Activities</i> , and this instruction. This program is not required for contract organizations unless specified in the SOW.

3.4.1.85. (Added) Ensures the oil analysis program (OAP) complies with AFI 21-124, <i>Oil Analysis Program</i> and MAJCOM directives (if applicable).
3.4.1.86. (Added) Ensures a nuclear surety program is implemented IAW AFI 91-101, <i>AF Nuclear Surety Program</i> , and nuclear munitions are maintained, handled and accounted for IAW AFI 21-204, <i>Nuclear Weapons Procedures</i> (if applicable).
3.4.1.87. (Added) Ensures effective management of the Engine Trending and Diagnostic (ET&D) program IAW TO 00-25-257, <i>Users Manual - Engine Trending and Diagnostics USAF Engines</i> , and AFI 21-132, <i>Air Force Engines Trending and Diagnostics Program</i> (if applicable).
3.4.1.88. (Added) Ensure effective management of weight and balance (W&B) program IAW applicable MDS TOs and this instruction.
3.4.1.89. (Added) Ensures proper management of Functional Check Flight (FCF), Operational Check Flight (OCF), and High Speed Taxi Check programs IAW Chapter 14 of this instruction by the applicable flight test organization.
3.4.1.90. (Added) Ensures resources and trained personnel are available to perform responsibilities of the CDDAR program.
3.4.1.91. (Added) Ensure Aircraft Structural Integrity Program (ASIP) is supported IAW AFI 63-1001, <i>Aircraft Structural Integrity Program</i> , (if applicable).
3.4.1.92. (Added) Establish local manufacture procedures and controls IAW governing directives.
3.4.1.93. (Added) Develop a 10-year facility plan specifying maintenance, upgrade, and replacement projections for the group's facilities. Update and coordinate this plan with the base Civil Engineer annually. Coordinate and prioritize group maintenance facility work orders monthly.
3.4.1.94. (Added) Coordinate with Air Base Wing Civil Engineer and airfield management to ensure depot maintenance requirements (e.g., aircraft turnaround, alternate fuel cell, hot refueling, end-of-runway (EOR) check area, engine run spots, explosive load (cargo) areas are included in the base parking plan.
3.4.1.95. (Added) Ensure adequate communication devices are available and appoint an OPR for assigned land mobile radios (LMR) IAW Chapter 14 of this instruction.
3.4.1.96. (Added) Ensure repair cost evaluations are performed and appropriate levels of <u>(Check applicability and ALC's)</u> review and repair authorization are established in repair sections IAW TO 00-20-3, <i>Maintenance Processing of Reparable Property and The Repair Cycle Asset Control System 38</i> , TO 00-25-240, <i>Uniformed Repair/Replacement Criteria for Selected USAF Support Equipment (SE)</i> , and TO 35-1-25, <i>Economic Repair Criteria for Support Equipment (SE)</i> .

3.4.1.97. (Added) Ensure the protection and security of aircraft, equipment and facilities.
3.4.1.98. (Added) Establish a group maintenance awards and recognition program to meet AF and AFMC requirements IAW AFI 36-2818, <i>USAF Maintenance Awards Program</i> .
3.4.1.99. (Added) Ensure group activities serviced by an off-base PMEL establish a TMDE collection point. The collection point coordinator is the single point-of-contact between sections and the servicing TMDE Flight and is trained by the servicing TMDE Flight. Designate the primary and alternate collection point coordinator in writing. The TMDE collection point coordinator shall manage the collection point using Chapter 14 as a guide.
3.4.1.100. (Added) Ensure procedures are developed and followed to properly turn in recoverable and consumable items IAW AFMAN 23-110, <i>USAF Supply Manual</i> .
3.4.1.101. (Added) Deploy Maintenance Recovery Teams and equipment to recover aircraft IAW Chapter 14 of this instruction and applicable MAJCOM guidance.
3.4.1.102. (Added) Monitor unusual material conditions for investigation, consideration of fleet-wide potential, and reporting by establishing procedures similar to those in paragraph 14.3 of AFI 21-101, <i>Aircraft and Equipment Maintenance Management</i> . (If this is Quality Deficiency Report (QDR)/Material Deficiency Report (MDR) / Software Deficiency Report (SDR) it should reference and utilize Technical Order 00-35D-54, <i>USAF Deficiency Reporting and Investigation System</i> .)
3.4.1.103. (Added) Ensures the Chafing Awareness Program is supported where applicable.
3.4.1.104. (Added) Review applicable support agreements (SA) annually or as required and make recommendations to the local Logistics Readiness Squadron (LRS) for changes.
3.4.1.105. (Added) Approve annual workload allocation plans as applicable for all repair nodes within the MXG.
DEV 3.5.1. through 3.5.1.5. Not applicable.
3.6. MXG Superintendent Responsibilities. Applicable only if an MXG Superintendent is assigned to an MXW.
3.7. (Added) Squadron Commander (SQ/CC) Responsibilities. The Squadron Commander/Director, or equivalent, is responsible to the MXG for managing the support and execution of DM to meet customer requirements. In addition, the Squadron Commander/Director will:
3.7.1. Ensure manpower and all levels of supervision are equitably distributed for all duty periods based on workload and customer requirements.

3.7.1.2. (Added) Ensure the MXG/CC/CL/CD and MXW/CC/CL/CD are notified of any critical shortages of personnel, aircraft, equipment, or components that might affect the unit's ability to support DM.
3.7.5. If required.
3.7.6.1. (Added) Ensure functional publication libraries are established and maintained IAW AFI 33-360, <i>Publications and Forms Management</i> , and AFI 33-322, <i>Records Management Program</i> .
3.7.7. Enforce sound DM, and CSAG-MD financial management practices.
3.7.8. Review status of training programs quarterly. Ensure maintenance qualification programs emphasize regulatory compliance.
3.7.11. Develop and administer the unit safety program. Establish a Mishap Prevention Program for the Squadron IAW AFI 91-202, <i>USAF Mishap Prevention Program</i> , similar to the one in Chapter 2 of this instruction. Ensure safety information is available and personnel in hazardous areas are aware of safety implications. Encourage use of Voluntary Protection Program.
3.7.11.1. (Added) Ensure the requirements of AFOSH STD 91-501, <i>Air Force Consolidated Occupational Safety Standard</i> , are implemented throughout the squadron. These requirements may be included in the unit safety program.
DEV 3.7.13. Not applicable.
3.7.14. Report deficiencies to appropriate authorities.
3.7.17. Also support the USAF IDEA program IAW AFI 38-401, <i>The Air Force Innovative Development Through Employee Awareness (IDEA) Program</i> .
DEV 3.7.18. Not applicable at MXWs. QA positions are filled through normal government hiring processes.
DEV 3.7.19. Not applicable at MXWs. Positions are filled through normal government hiring processes.
3.7.20. 10 USC 2472 requires DM to man to the funded workload. Deviations noted in Chapter 1 apply.
3.7.20.1. (Added) Ensure personnel authorized and assigned are adequate to support the unit mission and tasking plans. Coordinate with wing or ALC manpower office representatives for assistance in preparing requests to MAJCOM for UMD adjustments. Monitor additional duties,

leave, training requirements, and details.
3.7.20.2. (Added) Ensure maintenance is only performed by personnel who are trained, qualified, and/or certified (as required), unless under the direct supervision of a trainer or certifying official. Note, some personnel in organizations such as SMXG and MXSG are trained but not certified and may not require certification. In these cases the Squadron Commander/Director is responsible to ensure the personnel are qualified to do the work.
3.7.20.3. (Added) Maintain a current copy of the Unit Personnel Manpower Roster (UPMR). Allocates projected gains against pending or actual vacant slots. Maintain a record of personnel actions and verify approved personnel data subsystem entries are updated.
3.7.20.4. (Added) As applicable, ensure the unit is capable of deploying in response to wing taskings. Coordinate with the Logistics Readiness Squadron (LRS) Logistics Plans function and unit supervisors to prepare to execute plans. Initiate squadron deployment planning and provide inputs to plans.
3.7.20.5. (Added) Designate a focal point for deployments. This person will be referred to as the Unit Deployment Manager (UDM). (As applicable. UDM is at Wing level at ALC).
3.7.20.6. (Added) When evaluating taskings, the UDM considers other plans that task the unit, personnel/equipment requirements, and LIMFACs. Perform unit duties and responsibilities in AFI 10-403, <i>Deployment Planning and Execution</i> , Chapter 4 , Deployment Execution Equipment Preparation Requirements, and Chapter 5 , Personnel Preparation and Deployment Execution Requirements. (As applicable).
3.7.20.6.1. (Added) Review the SORTS and AEF Reporting Tool (ART) information for their organization (As applicable).
3.7.21. (Added) Monitor new requirements for training, equipment authorizations, special tools, E-Tools, workspace, facilities, and manning for impact on unit's capability to perform its mission.
3.7.22. (Added) Implement and manage self-inspection, retention and career motivation, security, mobility, and personnel reliability programs, as applicable.
3.7.23. (Added) (If applicable) Ensures the Squadron's requirements have been identified for Secret Internet Protocol Router Network (SIPRNET) and Non-secret Internet Protocol Router Network (NIPRNET) capability.
3.7.24. (Added) (If applicable) Ensure intrusion detection systems (IDS) are installed in permanent facilities when required to store munitions IAW DoD 5100.76-M, <i>Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives</i> . When IDS is not available, protect munitions as outlined in AFI 31-101, <i>The AF Physical Security Program</i> .

3.7.25. (Added) Ensure security, storage maintenance, and proper use of equipment according to AFMAN 23-110.
3.7.26. (Added) Ensure turn-in of consumable/expendable XB3 material and scrap is properly accomplished IAW AFMAN 23-110, <i>USAF Supply Manual</i> .
3.7.28. (Added) If applicable, review OPLAN 8044, <i>Emergency War Order</i> (EWO), applicable DOC statements, mobility, contingency, and exercise plans and ensure squadron processes are established to meet tasked requirements.
3.7.29. (Added) Ensures HAZCOM and Hazardous Material (HAZMAT) management programs are followed IAW AFI 90-821, <i>Hazard Communication</i> , AFI 32-7086, <i>Hazardous Materials Management</i> , and any local policy or applicable directives. Also reference related 48- and 91-series AFOSHSTD.
3.7.30. (Added) Coordinate with medical service agencies responsible for monitoring potentially hazardous environmental conditions within maintenance and industrial areas.
3.7.31. (Added) Ensure accurate daily documentation of maintenance actions, to include the MIS IAW TO 00-20-2, <i>Maintenance Data Documentation</i> .
3.7.32. (Added) Ensure MIS and aircraft forms are documented by the individual completing the task.
3.7.33. (Added) Ensure timely and accurate engine data is provided to the EM element for all applicable engines.
3.7.34. (Added) Establish procedures to control repair cycle assets IAW TO 00-20-3, <i>Maintenance Processing of Repairable Property and the Repair Cycle Asset Control System</i> .
3.7.35. (Added) Ensure compliance with MXG LMR Program IAW Chapter 14 of this instruction.
3.7.36. (Added) Enforce MAJCOM standards on location of G-files (hard copy or electronic TO-library carried on aircraft) as applicable.
3.7.37. (Added) Ensure procedures for identifying, recording, and clearing repeat, recurring, and CND discrepancies are understood and followed.
3.7.38. (Added) Establish a method to distribute maintenance cross-talk/crosstell messages, QA newsletters, policy announcements, technical notifications, and other important maintenance information for which no formal notification process exists.
3.7.39. (Added) Review and evaluate management and production effectiveness. Analyze personnel and equipment performance history using QA reports. Initiate management actions to

meet new workloads or correct reported/perceived deficiencies (as applicable).
3.7.40. (Added) Ensure a squadron Corrosion Control Program is implemented and managed.
3.7.41. (Added) Closely monitor aircraft/equipment impoundments.
3.7.42. (Added) Ensure OAP is monitored and administered IAW AFI 21-124, <i>Oil Analysis Program</i> .
3.7.43. (Added) Ensure squadron ASIP responsibilities are accomplished IAW the ASIP OI, AFI 63-1001, <i>Aircraft Structural Integrity Program</i> , and Chapter 14 of this instruction. All point of contact information will be provided to the ASIP manager.
3.7.44. (Added) Manage the squadron CANN program.
3.7.45. (Added) Ensure deferred maintenance, PRD and back-ordered parts are properly managed. Periodically review on-line supply products.
3.7.46. (Added) Ensures Special Purpose Recoverable Authorized Maintenance (SPRAM)/Floating Stock accounts are established IAW AFI 21-103, <i>Equipment Inventory, Status, and Utilization Reporting</i> , AFMCI 21-130, <i>Depot Maintenance Material Control</i> , and AFMAN 23-110, <i>USAF Supply Manual</i> .
3.7.47. (Added) Ensure reporting of materiel deficiencies according to TO 00-35D-54, <i>USAF Deficiency Reporting and Investigating System</i> .
3.7.48. (Added) Monitor requirements for composite tool kits (CTK), special tools and SE and take necessary action to ensure availability, as required IAW Chapter 10 of this instruction.
3.7.49. (Added) Ensure special experience identifier (SEI) qualified individuals are matched against proper SEI positions on the UPMR. Ensures SEIs are awarded to individuals meeting the qualification criteria and are reflected in the personnel data subsystem. (As applicable).
3.7.50. (Added) Coordinate permanent change of assignment (PCA) actions. Ensure required documentation is completed and submitted. Ensure the SQ/CC and squadron technical-administration section is briefed on all pending and completed PCA actions. (As applicable).
3.7.51. (Added) Review the D23, <i>Repair Cycle Asset Management Listing</i> , or G081 and other pertinent supply products to ensure proper asset management as applicable.
3.7.52. (Added) Distributes projected gain/loss lists and maintenance manpower requests (MMR) to all work centers and establishes suspense's for updates. Ensures approved personnel actions have been received for all updates then submits consolidated updates to programs as applicable.

3.7.53. (Added) Ensure SE enclosed in WRM or mobility kits is inspected IAW TO 00-20 series TOs (As applicable).
3.7.54. (Added) Establish emergency action procedures (including severe weather). Ensure emergency action procedures are followed during movement of aircraft, SE, and personnel evacuation.
3.7.55. (Added) Ensure the accomplishment of depot maintenance on Nuclear Weapons Related Materiel (NWRM) items complies with AFI 20-110 <i>Nuclear Weapons-Related Materiel Management</i> and AFMCI20-110, <i>Nuclear Weapons-Related Materiel Management</i> , AFMC Sup.
3.7.56. (Added) When the squadron is part of a Repair Network, will assign by letter any node managers responsible to a specific repair network.
3.8. Maintenance Operations Officer (MOO)/Maintenance Superintendent (MX SUPT) Responsibilities. Or equivalent within the MXWs.
DEV 3.8.10. Not applicable.
DEV 3.8.13. Not applicable.
DEV 3.8.14. Not applicable. MXWs do not have SCR's. The MOO/MX SUPT or equivalent shall ensure personnel are qualified to perform tasks through Maintenance Training and Production Acceptance Certification (PAC) Program and the Education and Training Management System (ETMS).
DEV 3.8.19. Not applicable.
DEV 3.8.28. Not applicable.
DEV 3.9.10. through 3.9.11. Not applicable.
DEV 3.9.16. Not applicable.
DEV 3.9.20. CUT is not applicable n MXWs.
DEV 3.9.30. Not applicable.
DEV 3.10.10. through 3.10.11. Not applicable.
DEV 3.10.14. Not applicable.
DEV 3.10.17. Not applicable.
DEV 3.10.23. Not applicable.

3.11. Production Superintendent (Pro Super). Also called the “Fixer” in the MXW.
DEV 3.11.3. through 3.11.4. Not applicable.
DEV 3.11.5. Flying schedules are not applicable.
DEV 3.11.6. through 3.11.7. Not applicable.
3.12. (Added) MXW Staff Key Leaders Responsibilities. There are important staff positions in the depot maintenance wings that provide enabling activity or functional expertise to the MXWs. Staffs vary by MXW, but Key Leaders, as a minimum, include:
3.12.1. (Added) The MXW Technical Director (MXW/TD) shall ensure systems engineering (SE) and engineering professionalism have been properly applied across the maintained systems/processes in support of production. The MXW/TD shall:
3.12.1.1. (Added) Ensure the OSS&E baseline is maintained in accordance with technical orders.
3.12.1.2. (Added) Ensure MXW scientist and engineering (S&E) personnel have required training to accomplish EN responsibilities.
3.12.1.3. (Added) Ensure the SE process is applied to Environment, Safety, and Occupational health (ESOH) affected processes.
3.12.1.4. (Added) Integrate ESOH considerations into the SE process using MIL-STD-882D when system safety practices, when product safety, suitability, reliability, availability and maintainability will be affected.
3.12.1.5. (Added) Employ critical safety item (CSI) tenets to identified critical safety items and assure compliance to Critical Safety Items Handbook on CSI defined by SPO/SPM Chief Engineers on maintained systems.
3.12.1.6. (Added) Environmental, safety and occupational health issues need integrating into system safety. Integrate ESOH considerations into the Systems Engineering process using MIL-STD-882D, <i>Standard Practice for System Safety: ESOH Risk Management Methodology for Systems Engineering</i> , when system safety practices, product safety, suitability, reliability, availability and maintainability will be affected.
3.12.1.7. (Added) Employ critical safety item (CSI) tenets to production processes and assure compliance to Critical Safety Items Handbook on components/systems/equipment as defined by SPO/SPM Chief Engineers.
3.12.2. (Added) The MXW/ Financial Management (FM) Office Chief, or equivalent, shall

accomplish the financial management, budgeting and ensure monitoring and compliance of financial operations for the respective MXW, Groups and Squadrons.
3.12.3. (Added) The MXW Business Office (OB) Chief, or equivalent, shall ensure accomplishment of maintenance training and transformation, ensure manpower and workload planning, support depot maintenance partnerships and business development for the respective MXW, its groups and squadrons.
3.12.4. (Added) The MXW/Quality Assurance (QPs or QAs) Office Chief, or equivalent, shall develop, support and monitor their respective wings, groups and squadrons with quality assurance programs as applicable. QPs/QAs shall ensure compliance and support inspections and audits as required.
Chapter 4 - AIRCRAFT/HELICOPTER MAINTENANCE SQUADRONS (AMXS/HMXS)
This section intentionally left blank. No supplemental data necessary.
Chapter 5 - MAINTENANCE SQUADRON (MXS)
This section intentionally left blank. No supplemental data necessary.
Chapter 6 - MAINTENANCE OPERATIONS SQUADRON
This section intentionally left blank. No supplemental data necessary.
Chapter 7 - MAINTENANCE PLANS, SCHEDULING AND DOCUMENTATION (PS&D)
DEV 7.1. ALC's will follow the guidance found in AFMCI 21-156, <i>Operational Workloading, Planning and Scheduling Control</i> .
Chapter 8 - QUALITY ASSURANCE (QA)
8.1.1. (Added) General. QA serves as the primary advisory agency for regulatory guidance in the maintenance organization, assisting maintenance supervision at all levels to resolve quality problems.
8.2. Responsibilities. QA serves as the primary advisory agency for regulatory guidance in the maintenance organization, assisting maintenance supervision at all levels to resolve quality problems. Most programs identified in paragraphs 8.2.1.1. thru 8.2.1.8. are managed outside MXW/QA but the maintenance task associated with the program will be surveilled by the QA office.
8.2.1.7. (Added) Manage Self-Inspection Program.

8.2.1.8. (Added) Manage FAA Part 145, <i>Repair Station Program</i> if applicable.
DEV 8.2.3. Depots do not have a PS&D function.
8.2.9. Assist the MXG/CC when coordinating <u>quality</u> related issues with HHQ, AFMC, Defense Contract Management Agency (DCMA) , and other outside agencies.
8.2.10. (Added) Wing QA Chief Responsibilities are found in paragraph 8.23.
DEV 8.3.9. At the ALC the Group Engineering Section coordinates on all requests for locally manufactured tools and equipment, and maintains the records and drawings for approved request.
DEV 8.3.10. IPI listing equates to Secondary PAC at the ALCs.
8.3.11. KTL equates to Q Stamp at the ALCs.
8.3.11.1. (Added) List shall be approved by the MXG/CC/CL/CD and reviewed at least quarterly for applicability and documented in E&I Plan/QASP.
DEV 8.3.14. Not applicable.
DEV 8.3.15. Not applicable.
DEV 8.3.16. Depots do not designate a TODO, the TODO is a contracted function.
DEV 8.3.17. Designated W&B and FCF program managers at the ALCs are assigned to the Production or Flight Test Squadron. Exemption is AMARG where they are in QP.
DEV 8.3.18. Not applicable.
DEV 8.3.19. At the ALC's, the ASIP monitors, or equivalent, reside with the engineering function.
DEV 8.3.21. Not applicable.
8.3.22. (Added) Monitor oil analysis program IAW AFI 21-124, <i>Oil Analysis Program</i> .
8.3.23. (Added) Ensures appropriate documentation is initiated for aircraft and equipment impoundments.
8.3.24. (Added) Ensure QA personnel conduct Personnel Evaluations (PE) on any personnel who are PAC certified every 24-months. Personnel must pass PE on task that are core competency of their job and/or task identified requiring special skills qualification (i.e. SCR or SSQ) to the fullest extent possible. For new personnel conduct a PE as soon as possible but no longer than 120 days from PAC task certification. Failed evaluations will result in a re-

evaluation within 30 days of recertification. Production supervisor will provide QA notification after recertification.
8.3.25. (Added) Determine the duties and responsibilities of inspectors.
8.3.25.1. (Added) Dedicated Inspector System. In an effort to enhance continuity and communication between QA and the squadrons, utilize the Dedicated Inspector System to the maximum extent possible. Inspectors from QA are aligned with individual squadrons and maintenance functions.
8.3.25.2. (Added) QA Chief will ensure inspectors evaluate the maintenance and logistics processes to ensure the right tools, equipment, technical orders, parts, requirements, etc. are on hand and properly integrated into the overall maintenance and logistics processes.
8.3.26. (Added) As the selecting/hiring official for QA inspector/COR, the QA Chief will ensure the pre-requisites to fill QA inspector/COR are as follows: the individual must be highly qualified subject matter expert (SME) in the functional area (i.e., avionics, AGE, aircraft maintenance, fabrication, munitions, etc) for the functional area position the individual will be evaluating. QA Chief must ensure civilian QA inspector/COR civilians have the prior maintenance experience in the functional area for which the position will be filled.
DEV 8.4.6. Establishing Secondary PAC is the responsibility of the Production Planning Team.
DEV 8.4.7. Review major and minor discrepancies for trends quarterly. If frequency or severities of identified discrepancies warrant inclusion of that item into a specific TO governing an action or inspection, the QA Chief Inspector will identify the deficiency to the appropriate supervisor who must submit an AFTO IMT 22 or AFMC Form 202, <i>Nonconforming Technical Assistance Request and Reply</i> .
DEV 8.4.9. Not applicable.
DEV 8.4.10. Not applicable.
DEV 8.4.11. Performed in Flight Test.
8.4.12.1. (Added) Review MSEP data monthly to identify high-missed items from evaluations, inspections and observations.
8.5.1.1. (Added) QA Inspectors/COR will conduct and document evaluations (PE, EPE) , inspections, and process reviews to include as a minimum the requirements in the MSEP.
8.5.1.2. (Added) Only munitions qualified inspectors with a 2W0 AFSC will inspect 2W0 maintenance tasks.
8.6. Quality Assurance Training. All CORs, inspectors and evaluators (i.e., QA personnel)

must be trained to the extent necessary to perform QA functions to include possessing sufficient technical knowledge to effectively perform their duties.
8.6.1.1. (Added) Training must cover specific technical and weapons systems training requirements.
8.6.1.2. (Added) Training must cover the evaluation and inspections of fundamental maintenance and logistics programs such as: tools and equipment, technical orders, material management, TMDE, forms documentation, FOD/DOP, safety and other programs found in the Routine Inspection Listing.
8.6.1.3. (Added) Training must cover the evaluation and inspections of functional area(s) (i.e. Avionics, AGE, Munitions, etc.).
8.6.2. 1. QA inspectors (permanent and augmentee) require an annual EPE on a personnel evaluation (PE) or a quality verification inspection (QVI).
8.6.3. Depot CORs (Civil Service or military) inspecting outside of their Subject Matter Expertise will be JQS or PAC qualified on the areas they inspect.
8.6.5. Ensure requirements of TO 00-25-172, <i>Ground Servicing of Aircraft and Static Grounding/Bonding</i> and AFOSHSTD 91-5, <i>Welding, Cutting and Brazing</i> , are met before inspecting or evaluating aircraft welding operations.
8.6.10. (Added) Training Documentation. All QA personnel must be trained or possess sufficient technical knowledge to effectively perform their duties. Employee training will be tracked in the Educational and Training Management System (ETMS) or any other HQ AFMC/A4 approved system. QA personnel are required to meet minimum qualifications (PAC certified for ALC's) on certified task being assessed, and must meet any qualification (mandatory formal training) requirements. The Maintenance Quality Manual or QAP will identify specific technical and/or weapons systems training requirements.
8.8.1. (Added) Group QA Chief will analyze quality data and take measures to prevent complacency and to ensure a "fresh look" at maintenance processes and maintenance discipline in all areas and shifts of operations.
8.9. Activity Inspection Program. AFMC units will establish an activity inspection program and will include all units and sections. The activity inspection may be conducted throughout the entire year. However, activity inspections will be conducted annually and will be completed within one year of date last inspected. When conducting Activity Inspections, the team will use, but is not limited to, the appropriate AF and MAJCOM LCAP checklists. Inspection Requirements. The MXW/MXG/CC/CL must ensure the depth and detail of the activity inspection is sufficient to evaluate the management capability of the maintenance organization. This is achieved by expanding the minimum requirements outlined herein or by adding special subject items. When conducting Activity Inspections, the team will use, but are not limited to,

the appropriate AF and MAJCOM LCAP inspection checklists as the basis to evaluate and provide actionable feedback for unit leadership. The team will evaluate the maintenance and logistics processes to ensure the right tools, equipment, technical orders, parts, requirements, etc. are on hand and properly integrated into the overall maintenance and logistic processes. The activity inspection team must address internal problems of the unit. The MXW/MXG QA Chief recommends adjustments to the requirements based on trends and problem areas identified by QA personnel, MAJCOM and AF LCAP inspections, or audit reports. In addition to utilizing all QA inspectors, subject matter experts may be used to conduct the Activity Inspection. The reviews are planned, coordinated, and managed by the Wing QA Focal Point.

8.9.2.1. **(Added)** The activity inspection must encompass a **statistical sampling** of all sections/flights of the organization being inspected and a **statistical sampling** of each facet of all facets of the operation to include unit self inspections within each **inspected** section/flight. Whenever possible, locally required inspections conducted by outside agencies (e.g., wing safety, training, security, LRS, Bioenvironmental Engineering, or the fire department) should be accomplished in conjunction with the QA activity inspection. This reduces the number of disruptions to the organization being inspected and also increases the comprehensiveness of the activity inspection.

8.9.3.1. **(Added)** Activity Inspection Reports. Inspectors should work with the inspected organization to assist in performing root cause analysis and developing corrective action plans for Wing wide systemic issues.

8.9.4. **(Added)** Follow-up Inspections. Depending upon the severity of discrepancies and the overall rating, the MXW/MXG/CC/CL will direct specific follow-up inspections. Follow-up inspections must not cause other inspections to be delayed.

8.10. Maintenance Standardization and Evaluation Program (MSEP). As AFMC OPR, HQ AFMC/A4US will implement, manage and execute the command's QA programs.

DEV 8.10.6.3.1. Deduct 0.5 percentage points for each TDV, DSV, and UCR from overall percentage grades up to and including Group level.

DEV 8.10.7. The results of the total number of inspections accomplished will be rolled up to create a cumulative rating by squadron, group and wing levels.

8.10.8. In addition to Material Management, Tool Control, and Equipment Management the following areas must be addressed:

8.10.8.7. Include the following tasks on the KTL/"Q" Stamps (Q coded WCD listings):

8.10.8.7.1. **(Added)** Major aircraft maintenance inspections (phase, periodic, transfer, acceptance, and isochronal) .

8.10.8.7.2. **(Added)** Engine final inspection (jet engine intermediate maintenance [JEIM]).

8.10.8.7.3. (Added) Engine, after installation to aircraft.
8.10.8.7.4. (Added) Engine controls (throttle) at time of installation.
8.10.8.7.5. (Added) Anytime maintenance is performed on the variable stator vane system on GE F110-100/-129 engines JEIM.
8.10.8.7.6. (Added) Final aircraft gun system installation prior to panel installation.
8.10.8.7.7. (Added) Final gun system inspection (in-shop).
8.10.8.7.8. (Added) Engine blade blends (All engine types).
8.10.8.7.9. (Added) Engine bay inspection.
8.10.8.7.10. (Added) A-10 white area.
8.10.8.7.11. (Added) In coordination with HQ AFMC/A4US and HQ AFMC/A4M, local QA Superintendent may add additional tasks to the KTL. QA will not remove any mandatory tasks as listed above unless properly coordinated with HQ AFMC/A4US. QA will consolidate wing inputs for addition to the MAJCOM KTL and the additions will be approved by the MXW/CC/CL/CD in writing. Standardized AQLs will be developed by QA for all tasks on the MAJCOM KTL. QA will review the list at least quarterly to ensure it encompasses those maintenance actions/ functions that directly affect maintenance quality. Each affected organization will be provided a copy of the list by QA. QA will ensure units maintain this list and ensure its accuracy and compliance.
8.10.8.8. AFMC RIL inspection frequency. Each applicable RIL will be evaluated per applicable units, functions, and MDS and will be included in the quarterly Evaluation and Inspection Plan. In addition to applicable technical orders, directives, instructions, MAJCOM RIL checklists with local unit publications will be used to conduct RIL inspections.
8.10.8.8.10. Technical data to include (AFMC Form 202, <i>Nonconforming Technical Assistance Request and Reply</i> , Special Handling 252 (SH252), Work Control Documents, and AFMC Form 561, <i>Process Orders</i>).
8.10.8.8.23. (Added) Flight control rigging procedures and primary flight control rigging tasks as designated in aircraft MDS specific technical data.
8.10.8.8.24. (Added) Oil Analysis Program (to include sampling procedures, documentation, etc).
8.10.8.8.25. (Added) Uninstalled engine test cell operations.
8.10.8.8.26. (Added) Aircraft Fuel System Repair Operations (prior to tank closure, etc) .

8.10.8.8.27. (Added) Aircraft pressurization/depressurization.				
8.10.8.8.28. (Added) Aircraft jacking operations.				
8.10.8.8.29. (Added) Aircraft engine run operations.				
8.10.8.8.30. (Added) Foreign Object.				
8.10.8.8.31. (Added) Equipment Management.				
8.10.8.8.32. (Added) Safety (Industrial & Flightline).				
8.10.8.8.33. (Added) Training.				
8.10.8.8.34. (Added) Engine Management.				
8.10.8.8.35. (Added) Dropped Object.				
DEV 8.10.8.9. Paragraphs 8.10.8.9 - 8.10.8.9.8. apply to AMARG only.				
8.10.8.9. AFMC Conventional Munitions Program. To ensure quality assurance of AFMC munitions activities, the unique organizational alignment and mission of AFMC units must be addressed. AFMC munitions activities will follow their group QA program (if established) or develop an instruction to institute a QA program within their areas of responsibility and coordinate through HQ AFMC/A4U and A4MW to ensure applicability and intent has been addressed. In non-group established QA programs, QA must report directly to the squadron CC/CL or higher function. The activity will use applicable paragraph in 8.10.8.9.1 thru 8.10.8.9.8. In addition, use Table 8.1 to ensure munitions, maintenance, and equipment quality and reliability.				
8.10.8.9.9. (Added) The following munitions activities will perform all 19 QA items listed in paragraph 8.10.8.9. and Table 8.1: 649 MUNS (Hill). NOTE: Item 9 may not apply to units that do not have missiles or trailers.				
8.10.8.9.10. (Added) The following munitions activities will add QA items 10-17 listed in Table 8.1. to their semi-annual Self-Inspection checklist: 78 LRS (Robins). NOTE: 72 LRS (Tinker) follows QAE, Chap 18, to ensure QA items 10-17 are evaluated.				
(Added) Table 8.1 AFMC Conventional Munitions QA Program				
<table> <tr><td>Maintenance Quality General Section</td></tr> <tr><td>1. QA Responsibilities (CC may differ from MXW; LRS, OSS, etc.)</td></tr> <tr><td>2. Quality Assurance Inspector Responsibilities</td></tr> <tr><td>3. Quality Assurance Training</td></tr> </table>	Maintenance Quality General Section	1. QA Responsibilities (CC may differ from MXW; LRS, OSS, etc.)	2. Quality Assurance Inspector Responsibilities	3. Quality Assurance Training
Maintenance Quality General Section				
1. QA Responsibilities (CC may differ from MXW; LRS, OSS, etc.)				
2. Quality Assurance Inspector Responsibilities				
3. Quality Assurance Training				

4. Maintenance Standardization and Evaluation Program (MSEP)
5. Establish/re-validate Acceptable Quality Levels (AQL/Standards)
6. QA Data Based (approved by MAJCOM A4US)
7. Monthly MSEP Summary
8. Quarterly MSEP Meeting
9. One Time Inspections (OTI)
Munitions Quality Specific Areas
10. Accountability
11. Storage practices, security, and safety
12. Inspection
13. Materiel handling and test equipment
14. Stockpile management
15. Training programs
16. Infrastructure (LPS, grounds, and bonds)
17. TAS, CTKs, tools, and support equipment
18. Munitions assembly
19. Tactical Munitions Reporting System (TMRS)
DEV 8.10.9. Unit MSEP Evaluation and Inspection Plan (E&I Plan). QA OIC/SUPT (MXG QA Chief) will develop an E&I plan for their respective MXG/SQ and will be coordinated through the appropriate MXG/SQ/CC/CL (if applicable, SQ MOO/Supt). QA will update/revise, publish and distribute a MXG/CC/CL/CD approved plan monthly/quarterly. The E&I Plan will be developed using the criteria listed below:
8.10.9.1.1. (Added) Consider historical PEs, QVIs, and other inspections data (especially any items having a pass rate of less than 80 percent); not mission capable (NMC) causes; aborts and trends; in-flight emergencies (IFE) and trends; high component or system failure rates; repeat/recurring/CND discrepancies trends; Deficiency Report (DR)/ Service Report (SR) trends; suspected training deficiencies; technical data violations (TDVs), detected safety violations (DSVs), and tasks outlined in aircraft -6 TOs.
8.10.9.4. (Added) Methods for inspecting, evaluating, and rating technician proficiency, equipment condition etc.
8.10.9.5. (Added) Key Task Listing (KTL)/"Q" Coded items.
8.10.9.6. (Added) Assessment type (i.e., task specific item, procedure or process), frequency, and minimum number of PE, QVI, Routine Inspection List (RIL) and other assessments to be performed on a recurring basis.
8.10.9.7. (Added) Assessment areas. For the purpose of planning and conducting assessments, major workloads will be broken down into assessment areas and documented in the QASP and/or QAP (As applicable). Assessment areas are defined as segments or portions of a workload,

system, component, process, procedure, or subject matter that is investigated, inspected, evaluated or audited.
8.10.9.8. (Added) Minimum Number of Assessments. The methodology (e.g. ANSI- Z1.4 2003) or rationale used to determine type (i.e., task specific item, procedure or process) and minimum number of PEs, QVIs, and routine inspections to be performed will be documented in the Maintenance Wing QA Manual, QAP or QASP.
8.10.9.9. (Added) Acceptable Quality Levels (AQL) /Standards. A standard is the acceptable quality level (number of minor defects) that can be considered satisfactory as a process average or conforming to established criteria.
8.10.9.9.1. (Added) An AQL standard denotes the maximum allowable number of minor findings for any assessment. It must be strict enough that the task, process, or product meets an acceptable level of quality, but is not so strict that a QAR-1 rating is unattainable. The AQL standard is derived from QA performance- based data. Quality Assurance will develop procedures for determining minimum AQL standard levels delineating an “attainable” quality level. These levels will comprise the AQL standards for all assessment types.
8.10.9.9.2. (Added) Failure to meet an AQL standard results in the assessment being rated as a QAR-3, failure. An identified major finding would also result in an assessment being rated as a QAR-3.
8.10.11.2. CAT II minors shall be documented for trends, and will be counted against the AQL.
8.10.13.3.1. (Added) UCR. An unsatisfactory condition is defined as an event/discrepancy that requires immediate supervisory intervention to ensure safety or process/product fit, form, or function reliability. Unsatisfactory conditions are deemed major and will be documented as a UCR. A condition of a minor nature shall be documented against the applicable checklist or its regulatory guidance.
8.10.14. Personnel Evaluations (PE). A PE is a direct evaluation on any PAC certified personnel (Note: Personnel evaluations for industrial services and non-critical support personnel is optional at local discretion). QA will provide notice not less than one hour prior to the evaluation. QA will determine what task will be evaluated. The PE will be on work in-progress or work about to begin. Use PEs to evaluate job proficiency, degree of training, and compliance with technical data. PEs will be used to evaluate newly certified personnel/teams, process changes to include the new processes and procedures and equipment changes. Individuals performing or certifying PAC maintenance tasks are subject to a PE. Rate PEs “pass” or “fail” based on established AQLs/standards. Document the PE on AF Form 2419, <i>Routing and Review of Quality Control Report</i> , MIS, or in the MAJCOM-approved database. Ensure personnel performing maintenance on aircraft/equipment pass a PE every 24 months. Failed evaluations will result in a re-evaluation within 30 days of recertification of failed task. Supervisors will notify QA when recertification is accomplished.
8.10.14.1. The PE will include an evaluation of the individual’s training records, tool box,

TMDE and TO. General maintenance practices that relate directly to the task being performed (e.g., safety, material handling, use of tools and equipment, Foreign Object Damage prevention, Electrostatic Discharge prevention, and workmanship) will be examined during the PE. Other maintenance practices may also be examined as locally determined.
8.10.14.1.2.1. (Added) The team task is rated as an overall pass or fail. Team evaluations will be scored the same as PEs. During team evaluations, errors committed by team member(s) and not detected by team chief may also be attributed to the team chief.
8.10.14.2. Individuals or team members will be immediately decertified (on the evaluated task) by their supervisor for a failed PE rating in accordance with applicable training regulations. Determine ratings as follows:
8.10.15.1. Rating QVIs. Rate QVIs “pass/QAR1” or “fail/QAR3” by comparing the number of discrepancies with the established AQLs/standards.
8.10.15.1.3.1. (Added) Each QVI is chargeable to the technician or supervisor who stamped the WCD, signed off/cleared the “corrected by” block or “inspected by” block of the applicable maintenance form or equipment record. When evaluating the technician who stamped the WCD or signed off the “inspected by” block, evaluate only the items normally verified by stamping the WCD or signing off the “Red-X” in the A/C Forms.
8.10.16. Special Inspections when driven by the analysis of assessment data may be conducted at the discretion of the local QA or requested by MXW/CC/CL/CD, MXG/CC, Branch Chief, SQ/CC or work center supervisors. Additionally, observed deficiencies beyond the scope of an inspection in progress not meeting the criteria of a DSV, TDV or UCR will be recorded in QIMSS under the category of Special Inspection. SIs will be assigned a rating (QAR-1 or 3) based on severity of the observation. SIs are designed to provide a flexible tool to complement other quality assessment types.
8.10.16.1. (Added) Individual Tool Kit (ITK) inspections will be performed at the beginning or end of shift and avoid impact to production to the maximum extent possible. Personnel will be afforded reasonable time to replace tools/items to appropriate location(s) and to replace damaged expendable tools prior to beginning ITK inspections.
8.10.18. Acceptable Quality Levels (AQL/Standards). When establishing the AQL consider at least six months of data on evaluations performed, and other pertinent data. Consider combining items of equipment within a general equipment type having nearly identical standards. QA has the option to create an AQL formula for inspecting only a portion of a task once a baseline standard for a large task is established (e.g. aircraft phase/ISO inspection has an AQL of 6, if QA inspects 50% of the task, the AQL would be 3).
8.10.19.5. Key Task List (KTL)/Q Stamps.
DEV 8.10.19.8. In lieu of high-missed carded items the ALCs will use failed QVI data.

8.10.20. The MXW/GP/unit must conduct quarterly meetings to review the visual information, graphs, narratives, quality trends identified through inspections and evaluations, discussion of common problem areas and descriptions of successful programs or initiatives in the monthly summary per paragraph 8.10.19 above. Meeting minutes to include slide presentation with corrective actions plans and will be posted on the QA Community of Practice (CoP).
8.10.21. (Added) Process Review. A review of a process from end to end or a portion of it. The review may include a review of planning, technical data, WCD's, equipment, tools, training, material and other key areas that affect the process. The process review should include participation from EN, GK, Business Office, QA, Safety, Environmental and other SME's as required. QA may perform PEs, QVIs and applicable LCAT checklists during the process review. QA findings will be documented on AFMC Form 343's, <i>Control and Processing</i> or other local quality forms. A final written report will be produced at the conclusion of the process review. An AFSO 21 8 Step event may be required after the process review to address needed countermeasures and corrective actions.
8.11. Lead Command-approved QA database. Data Collection. QIMSS will be used as the tool for collecting and compiling QA data collected by QA personnel. This data will be reviewed monthly to analyze results, identify trends, and will be reported to management in the appropriate forum. This information will allow management to make informed and responsible decisions about the quality system. The organization assessed is responsible for ensuring the corrective and preventive action is entered into QIMSS. Personnel using QIMSS must be trained to the extent necessary to effectively use the system. NOTE: Oversight inspections (e.g. Policy Oversight, Activity Inspections, etc) may be captured in Access, Excel or an automated MIS. Minimum data fields contained in the database must be:
8.12.2.1. Deficiency reporting also includes quality, material, software, warranty and service reports (SR), exhibit processing, and inputs for R&M working groups. The PIM's DR responsibilities are:
8.14. Technical Order Distribution Office (TODO). The TODO function is contracted at the ALCs.
8.14.1.5.1. (Added) Monitor the TODA and its sub-functions including the central TO file, LCL, LWC, and local job guide (LJG) program, computer program identification numbering (CPIN), pack-up data IAW TO 00-5-1, <i>automated TO management system</i> , and timely notification of priority technical data to the appropriate group or squadron supervisors.
8.15. One-Time Inspections program. OTIs may be equipment condition or procedural compliance oriented. OTIs may be continued over a period of time until problems are resolved. QA or the OWC will perform OTIs.
DEV 8.16. FCFs to include OCFs) . The program is managed by the applicable production squadron and flight test organization. QA will provide oversight and surveillance.

8.16.2.7. (Added) Ensure standard FCF profile and associated procedures are established for each type of assigned aircraft. In addition, when a full FCF profile is not required, a tailored profile is developed by eliminating procedures from the standard profile not required to verify functional ability of the system causing the FCF.
8.16.2.8. (Added) The aircraft -6 TO does not normally require an FCF for a single engine change on a two engine aircraft. However, FCFs are required for an extended over-the-water flight (i.e., overseas deployment). This requirement applies to engines received from the propulsion flight or depot with no aircraft operating time since major maintenance. This does not apply to engines obtained from donor aircraft (i.e., CANN) with established aircraft operating time.
8.16.3.6. (Added) The following are FCF program manager responsibilities:
8.16.3.6.1. (Added) Ensure coordination with the appropriate squadron for an FCF pilot/aircrew and provide squadron operations with the following information: aircraft tail number, reason for the FCF, and anticipated takeoff time.
8.16.3.6.1.1. (Added) Local FCF procedures will include:
8.16.3.6.1.1.1. (Added) Debriefing procedures.
8.16.3.6.1.1.2. (Added) Include maintenance actions performed on transient aircraft, to include step by step guidance for accomplishment of FCFs.
8.16.3.6.1.1.3. (Added) Procedures for accomplishing FCFs while away from home station.
8.16.3.6.2. (Added) Maintain an information file for briefing air crews. As a minimum, this file must contain unit directives concerning FCF procedures, authorization lists for FCF crews, and FCF checklist for each type of assigned aircraft. Information file will also include:
8.16.3.6.2.1. (Added) Mission profile for each type of assigned aircraft, consisting of checks to be accomplished, presented in consecutive order.
8.16.3.6.2.2. (Added) TO 1-1-300, <i>Acceptance/Functional Check Flight And Maintenance Operational Checks</i> .
8.16.3.6.2.3. (Added) Map of local FCF area or route of flight.
8.16.3.6.2.4. (Added) List of authorized FCF crew members signed by the OG/ CC. Retain certification letters on file for a minimum of one year.
8.16.3.6.2.5. (Added) Review the log monthly for trends indicating problems requiring further analysis or corrective actions. Identify deficient areas and forward to the MXW/CC/CL/CD and OG/CC for required review or action.

8.16.3.6.3. (Added) An FCF checklist must be used for each FCF. QA may attend debrief for FCFs. During debriefing, the FCF checklist and aircraft forms must be reviewed to determine if all requirements have been accomplished. Each discrepancy discovered during the FCF must be documented on AFTO Form 781A. After completing the review, the checklist must be sent to production squadron for inclusion in the aircraft jacket file.
8.16.3.6.4. (Added) Maintain a copy of the AF Form 2400 or automated product for deficiency and trend analysis.
8.16.7.1. (Added) While performing an FCF away from home station, the applicable requirements for FCFs of the transient/host base must be followed. The transient/host base QA office must be contacted and should be the focal point for all FCF requirements.
DEV 8.17. Inflight Operational Checks is managed by the Flight Test Squadron.
DEV 8.18. High Speed Taxi Checks. Managed by the Flight Test Squadron.
DEV 8.19. Weight and Balance (W&B) Program. ALC MXW/CC will assign Weight and Balance Program responsibilities.
8.19.1.1. The weight and balance authority is the MXG/CC or equivalent.
8.19.1.8. Weight and balance handbook storage and physical location will be determined by MXG/CC or equivalent and must be standardized for like MDS.
8.20.1.1. (Added) Notify MAJCOM functional managers when local chafing OTIs are implemented.
8.22. QA Responsibilities. QA assessments will include all applicable checklists. Precision Measurement Equipment Laboratories (PMEL) will comply with TO 00-20-14, <i>Air Force Metrology and Calibration Program</i> , for development of QA Plans but will meet the minimum requirements for the performance, documentation, correction and reporting of discrepancies identified through Routine Inspection Lists assessments identified in this instruction. OO-ALC 309 MXW Geographically Separated Unit (GSU) Operations will comply with the requirements of AFI 21-101, AFMCSUP, Chapter 8 . GSUs are 581/MMXS Rivet Minuteman Integrated Life Extension (MILE) operations at Malmstrom AFB, MT; Minot AFB, ND; F.E. Warren AFB, WY and 576 Flight Test Squadron, Vandenberg AFB, CA; 525EMXS at Kadena AB, Japan.
8.23.4.4. Maintenance Wing Quality Manual. The Maintenance Wing Quality Manual is the basic implementation guidance for depot maintenance production and production support quality requirements. It provides an organized way of communicating specific types of quality processes/procedures required, defines specific roles and responsibilities, and how those quality processes are implemented. This manual provides basic requirements for preparation of the production group's QAPs/QASPs. A higher-level quality manual can be used at wing discretion as long as all requirements contained in this instruction are addressed.

8.23.13. (Added) Serves as the OPR for writing the wing supplement to AFI 21-101 in accordance with AFI 33-360, <i>Publication Management Program</i> .
8.23.14. (Added) Develop a QA Community of Practice (CoP)/SharePoint or equivalent and provide HQ AFMC/A4US full access. As a minimum the following items will be posted or linked using the deliverable format templates provided on the AFMC LCAP CoP (as applicable).
8. 23.14.1. (Added) Key Task Listing/Q Stamps.
8. 23.14.2. (Added) RIL Checklists.
8. 23.14.3. (Added) MSEP Evaluation & Inspection Plan including Surveillance Schedule.
8. 23.14.4. (Added) Monthly summary and metrics (8.10.19).
8. 23.14.5. (Added) Checklist applicability Matrix.
8. 23.14.6. (Added) Quality Review Board Analysis.
8. 23.14.7. (Added) Local Operating Instructions.
8. 23.14.8. (Added) Cross-tell information/QA Flash.
8.23.15. (Added) The Maintenance Wing Quality Assurance Chief will review the Quality Manual for compliance to this instruction, at least annually or when major changes, updates, or revisions are made. This manual meets the requirements of AFMCI 63-501, <i>AFMC Quality Assurance</i> , for production maintenance QAPs. The Maintenance Wing Quality Manual will:
8.23.15.1. (Added) Identify the type (i.e., task, specific item, procedure or process) and minimum number of PE, QVI, and RIL to be conducted monthly or delegate the requirement to be included in the QAP/QASP.
8.23.15.2. (Added) Identify type and frequency of reports required by Wing QA office.
8.23.15.3. (Added) Identify organizations responsible for QA functions.
8.23.15.4. (Added) Identify quality training requirements and the organization responsible for providing that training per this instruction.
8.23.15.5. (Added) Define the process for control, routing and follow-up of AFMC Form 77, <i>Request for Quality Assistance</i> .
8.23.15.6. (Added) Define the process for control, routing and follow-up of AFMC Form 78, <i>Deficiency Report</i> , if used. AFMC Form 78 can be used to report and correct internal

deficiencies.
8.23.15.7. (Added) Identify inspections to be performed based on requirements. This requirement may be delegated to the individual Group QAPs/QASPs.
8.23.15.8. (Added) Define the corrective action and preventive action process to be accomplished by production units. Care should be taken to determine root causes of deficiencies rather than simply treating symptoms. The process will, as a minimum:
8.23.15.9. (Added) Include analysis of the defects and actions taken.
8.23.15.10. (Added) Include methods used by QA offices to communicate and cross-feed information to other groups and wings.
8.23.15.11. (Added) Include methods used for QA to follow-up on corrective action taken by unit, preventive action, or process changes made to prevent recurrence or new occurrences of similar non-conformances.
8.23.15.12. (Added) Define requirements for development of QAPs and QASPs.
8.23.15.13. (Added) Establish standards for Quality Assessment Results (QAR) ratings.
8.23.15.14. (Added) Define local process for documenting deficiencies, corrective/preventive action, and follow-up data into QIMSS.
8.23.15.15. (Added) Define requirements to analyze quality deficiency and acceptance inspection reports and recommend appropriate corrective and preventive action to production divisions.
8.23.16. (Added) Develop a Quality Assurance Plan (QAP) if not documented in the MXW Quality Manual.
8.23.16.1. (Added) Quality Assurance Plan. The QAP identifies specific detailed quality processes and procedures relative to a particular group. QAPs provide documentation of a group's day-to-day operational QA procedures. If processes are not defined in the Maintenance Wing Quality Manual, the QAP will document these procedures. The QAP includes what shall be accomplished, by whom, when, how, and what documents are used and how they are controlled. QAPs will be reviewed at least annually to ensure currency of existing or new policy requirements, to ensure quality program objectives are being met and to introduce improvements to the processes. All programmed production workloads will be addressed in the QAP in support of the Maintenance Wing Quality Manual.
8.23.16.2. (Added) QAP Content. As a minimum, the QAP will address the following:
8.23.16.2.1. (Added) Specific QA processes and procedures for individual workloads not

contained in the Maintenance Wing Quality Manual.
8.23.16.2.2. (Added) Data collected, type of analysis done, reports to be accomplished and review level as a minimum, if not specifically addressed in the Maintenance Wing Quality Manual.
8.24.7. (Added) Ensure QA representative will serve as a member of the Pre-Production Planning Team to assist in the development and update of WCDs by identifying quality (Q) inspection codes, if required, and any other quality requirements.
8.24.8. (Added) Ensure a QA representative is present, as required, at any problem review meetings between maintenance personnel and the responsible engineer or equipment specialist developing a solution for validated problems.
8.24.9. (Added) Participate in verification of any new or revised procedures and inspect any nonstandard repairs and maintenance problems when requested.
8.24.10. (Added) Review and take appropriate action on non-compliance findings.
8.24.11. (Added) Attend Wing QA crossfeed meetings.
8.25.2. A qualified COR or evaluator shall conduct an EPE biennially on each inspector while they are performing one evaluation and/or one inspection.
8.25.5. (Added) Quality Assessment Ratings. A value reflecting the results of quality assessments.
8.25.5.1. (Added) Ratings. These ratings will be input into QIMSS as either pass (QAR-1) or fail (QAR-3). Deficiencies will be classified as major or minor findings. A minor finding is defined as an unsatisfactory condition that requires repair or correction, but does not endanger personnel, affect safety of flight, jeopardize equipment reliability, or warrant discontinuing a process or equipment operation. A major finding is defined as a condition that would endanger personnel, jeopardize equipment reliability, or warrant discontinuing process or equipment operation.
8.25.5.2. (Added) QAR-1. This rating indicates the evaluated process/product met the established standard. This rating is considered a pass rating.
8.25.5.3. (Added) QAR-3. This rating indicates an evaluated process/product did not meet the established standard because one or more major findings were detected or exceeded the AQL for minors. This rating is considered a failed rating.
8.25.5.4. (Added) When a QAR-3 condition is observed, QA personnel will notify production supervision immediately. Under no circumstances will a safety error or equipment reliability error go uncorrected. If an assessment is being performed, QA personnel will consider the

seriousness of the error committed when deciding whether or not the assessment should be allowed to continue.
8.25.5.5. (Added) When QAR-3 rating that is directly attributable to a certified technician's proficiency, that individual, team, or team member will be decertified. Decertification and recertification procedures are defined in AFI 21-101_AFMCSUP, Chapter 14 .
8.25.5.6. (Added) QA personnel must assign a QAR-3 rating if:
8.25.5.6.1. (Added) A TO "warning" is overlooked or a safety error that could result in personal injury is detected.
8.25.5.6.2. (Added) A TO "caution" is overlooked or an equipment reliability error that could result in equipment or system unreliability or damage is detected.
8.25.5.6.3. (Added) The person or team accomplishing the task being evaluated demonstrates a lack of technical proficiency.
8.25.5.6.4. (Added) QA personnel may assign a QAR-3 to a process/program where systemic deficiencies are evident.
8.26. (Added) AFMC QA Working Group (QAWG). Members of the working group are HQ AFMC/A4US the ALC Maintenance Wing Quality Assurance Chiefs, designated union representative and AMARG equivalent or their representative. They will:
8.26.1. (Added) Meet annually (subject to funding) otherwise by teleconference and phone in to participate in the monthly telecon.
8.26.2. (Added) Act as focal point for issues that impact depot maintenance QA functions.
8.27. (Added) Quality Review Board. A maintenance quality review board will be established at the wing level to include at a minimum the MXW commander and/or deputy, group commander/director and/or deputy, and wing and group QA Focal Points. The quality review board will be chaired by one of the following MXW/CC/CL/CD/CV.
8.27.1. (Added) The objective of the quality review board is to ensure all levels of management are informed of quality data collected by the QA functions. This forum provides analysis of data generated from assessments and compliance reviews, cross-feed of information to all production activities, evaluation of program performance, and cross-feed of process improvement efforts. This data is also used to make adjustments to the Maintenance Wing Quality Manual, QAP, or QASPs, as deemed necessary.
8.27.2. (Added) The Maintenance Wing Quality Manual and/or QAP will define the meeting frequency of the quality review board.

<p>8.28. (Added) Deficiency Reporting (DR) and Investigating System. The deficiency reporting and investigating system has been established to identify, report, and resolve deficiencies on military weapon systems. HQ AFMC/ENP has overall responsibility for TO-00-35D-54, <i>USAF Deficiency Reporting and Investigating System</i>, and for matters pertaining to overall DR policy and procedures.</p>
<p>8.28.1. (Added) Deficiencies of products meeting the reporting criteria of TO 00-35D-54, Chapter 3 shall be reported through the Joint Deficiency Reporting System (JDRS) electronic report or on SF 368 or equivalent format.</p>
<p>8.29. (Added) Request for Quality Assistance (RQA) AFMC Form 77. Timely and effective responses to deficiencies and needed improvements are critical. A system of identifying deficiencies in maintenance processes and bringing solutions to bear on them is essential and must be developed at each center. Quality assistance can be requested by anyone submitting an AFMC Form 77. Forms and procedures for processing the AFMC Form 77 will be made readily available to the maintenance work force.</p>
<p>8.30. (Added) AFMC Form 343, Control and Processing. Quality assessment data will be documented on the computer generated AFMC Form 343 and recorded in QIMSS. The QIMSS database collects, indexes, files, stores and maintains applicable AFMC Forms 343 data.</p>
<p>8.30.1. (Added) Processing. Timely corrective/preventive action is required to ensure problems are identified and corrected. QA must input the assessment into QIMSS within one work day (24hrs). The suspense date for corrective/preventive action is 10 work days, beginning the next work day after the defect is input into QIMSS and ending with acceptance of corrective/preventive action by QA. The production maintenance function is responsible for ensuring corrective/preventive action is initiated as soon as possible and input into the QIMSS database.</p>
<p>8.30.1.1. (Added) Extension of Suspense Date. Local policies and procedures will be developed and documented in the Maintenance Wing Quality Manual for extension of suspense dates. Extensions will be recorded and tracked in QIMSS.</p>
<p>8.30.2. (Added) Follow-up Assessments. Depending on the severity of the discrepancies the COR, QA supervisor, or management may direct specific follow-up actions. Results of follow-up assessments will be recorded in QIMSS. Follow-up assessment procedures will be documented in the Maintenance Wing Quality Manual or delegated to Group QAP.</p>
<p>Chapter 9 - IMPOUNDMENT PROCEDURES</p>
<p>9.3.5. Impoundment Officials may also be any appointed Aircraft Mx Officers, SNCOs, Production Superintendents assigned to Flight Test or Engineers.</p>
<p>9.4.11.3. When an aircraft or MEI sustains FO damage from an unknown cause.</p>

9.4.11.4. (Added) When the impoundment authority determines extraordinary measures are required to ensure the safe operating condition of a specific weapon system/end item or to address any degradation of aircraft airworthiness, a serious anomaly, or after the 2nd repeat/recur of a safety-of-flight maintenance discrepancy.
9.6.1. Local procedures will be defined in local publications utilizing MIS.
9.6.3. Each MXW will have standardized local checklists.
Chapter 10 - TOOL AND EQUIPMENT MANAGEMENT
10.2.1.9.1. If paper product is used, control procedures for their use will be identified in local instructions.
10.2.1.9.2.3. (AFMC) Rag control procedures will be identified in local publications for all critical-potential FOD areas (see Chapter 14).
10.2.1.18. (Added) Management of Supplemental Listings procedures.
10.2.1.19. (Added) Procedures to issue and account for tools where more than one person is using the same tool kit.
10.2.1.20. (Added) Cleco Control Procedures. Local procedures will be developed to ensure accountability and control of Clecos. Marking/identifying each Cleco is not required, but issue and receipt procedures must be established to ensure positive control.
10.2.1.21. (Added) Issue, receipt, and control of tool kits used to support temporary duty (TDY) teams and tool control procedures for TDY personnel.
10.2.1.22. (Added) Long term tool kit storage procedures. Special function tool kits such as aircraft battle damage repair (ABDR), combat distribution team (CDT), crash recovery, other mobility tasking or other unused/unassigned tool boxes may be stored long-term. Tool kits will be inspected using the supervisor inspection criteria and sealed before being stored in an enclosed, controlled and secured area. While in storage, these kits will be inspected every 18 months for inventory content and corrosion prevention. Tool kits authorized for long term storage and storage handling will be locally determined.
10.2.1.23. (Added) Procedures for Contract Field Teams when performing maintenance at the ALCs.
10.3.1.1. (Added) The ALCs will establish a tool control manager position and identify the individual selected to fill the position in writing. This position will be established at Wing, Group, or Squadron manager level, as required to effectively manage their tool control programs.
10.3.1.1.1. (Added) The Tool Control Manager main role is to be liaison between tool program

and the Maintenance Groups (AMXG, EMXG, MMXG, SMXG, MXSG, MXW, etc.), policy implementation, manages lost tool program, monitor loaned tools, monitor quality finding for trends, develops corrective action plans for systemic tool issues, brief Groups, Wings, and Center on tool program status.
10.3.2. Consider deployment taskings, Temporary duty (TDY), and special test project requirements when making CTK determinations. Insure user input is considered when determining quantity, content and layout of tool kits.
10.3.2.1. (Added) Only the ALC Maintenance Support Group or authorized contractors have the authority to acquire, store, issue, manage, and dispose of common tools used in support of Depot Maintenance Activity Group (DMAG) funded organizations.
10.3.5.1. (Added) Finger holes are authorized in cutouts as long as they do not take away from the shape of the tool.
10.3.5.2. (Added) “Shape of the item” will be defined in local publications.
10.3.6.3.1. (Added) Consumables. Supervisor approval is required before any consumable is added to a tool kit and will be controlled according to this instruction and local publications. Consumables in a tool kit will be shadowed, marked and identified by nomenclature, size (if applicable) and quantity, on the tool kit supplemental listing. The technician and their supervisor will initial and date the changes on the supplemental listing. Inventory and lost tool procedures will apply to consumable items.
10.3.6.3.2. (Added) Expendable Items. Supervisor approval is required before any expendable is added to a tool kit and shall be controlled according to this instruction and local publications. Expendables in a tool kit will be shadowed (inlaid, silhouetted, outlined), etched and identified by nomenclature, size (if applicable) and quantity, on the tool kit TKCRL or supplemental listing. A stock of spare tools is authorized to replace broken or worn tools to prevent unnecessary work delays. One-for-one swap of tools does not have to occur on a daily basis. A stock of broken or worn tools may be returned as one-for-one swap items. Strict accountability and control procedures (one-for-one) for these items will be included in the local tool control supplement. Inventory and lost tool procedures will apply to expendable items.
10.3.6.6. At the ALCs the supervisor acts as the CTK/TK custodian.
10.3.6.7. (Added) Maintenance Support Group/Authorized Contractor Responsibilities are as follows:
10.3.6.7.1. (Added) Prepare a TKCRL for each kit. The minimum contents of the listing are:
10.3.6.7.2. (Added) Template identification Number.
10.3.6.7.3. (Added) Kit identification Number.

10.3.6.7.4. (Added) Nomenclature/Description.
10.3.6.7.5. (Added) Quantity issued.
10.3.6.7.6. (Added) Date of issue.
10.3.6.7.7. (Added) Tools listed by drawer location.
10.3.9.1. (Added) Local publications will address safety items (such as rubber over tweezers, paper razor blade covers, etc).
10.3.10. MXG/CC (MXW/CC or equivalent functional authority for maintenance) will determine marking requirements. At a minimum, these markings will identify the individual.
10.3.13. (Added) Non-mobile Cabinet Tool kits. Clearly mark all drawers that are part of the tool kit if excess drawers exist. Excess drawers may be used for other shop requirements provided they are labeled as such and contents do not violate other AF or MAJCOM instructions.
10.3.14. (Added) Personal Items. Technician's personal items (i.e. rings, wallet, and watches) may be stored in an individual tool kit (ITK), however, technicians are limited to one personal drawer. The drawer must be clearly labeled "Personal" and will only contain authorized personal items. This drawer will not be subject to inspection during a regular TK inspection. Each technician should be provided a personal locker, if possible, to store other personal items.
10.3.15. (Added) Personal Protective Equipment (PPE). A drawer or an additional tool box/container is authorized for protective equipment and inclement weather apparel and must be clearly labeled "Personal Protective Equipment". The personal protective equipment containers are subject to toolbox inspections. Each ALC will develop in their supplement to this instruction, a process to manage all non-disposable PPE (i.e. safety glasses, face shields, leather gloves, aprons, ear defenders, cloth coveralls and inclement weather gear, etc).
10.4. The first level supervisors/section chief for ALCs/AMARG are the individuals who sign for CTKs, therefore they are also the custodian.
10.4.1. Units also authorized to use Point of Use Stations (POUS).
10.4.1.1. Unit will use FEMS to:
10.4.1.2.1. (Added) When the AFMC authorized tool management system is not capable of performing use one of the following methods:
10.4.1.2.2. (Added) AF Form 1297, Temporary Issue Receipt.
10.4.1.2.3. (Added) Locally developed form as specified in the local publication.

10.4.1.2.4. (Added) Vendor supplied system for point-of-use machines.
10.4.2.2.1. (Added) Tool Inventory Requirements.
10.4.2.2.1. (Added) Conduct annual inventories of the main tool room and the Production Support Centers (PSCs) using the AFMC authorized tool management system reports. Inventory results will be analyzed and retained by the tool control function to identify and implement corrective actions IAW local publication.
10.4.2.2.1.1. (Added) Prepare inventory adjustment variance reports from periodic inventories IAW local publication. Inventory adjustments will be reviewed and approved by the tool management function. This variance report will be retained for a period of not less than one year.
10.4.2.2.1.2. (Added) Inventory and Inspection Requirements. Inventory and inspection responsibilities and minimum frequencies are as follows:
10.4.2.2.1.2.1. (Added) The person who is responsible for the consolidated tool kit (CTK) will perform an inventory when the tool kit is opened (start of shift) and at the end of the workday (end of shift). In addition, when the responsible person performs a kit inventory at the end of the workday (end of shift), the inventory will be documented on AFMC Form 309, AFMC Tool Control Inventory Record.
10.4.2.2.1.2.2. (Added) The supervisor or designee (that is the alternate supervisor, wage leader, or military equivalent) will perform the inventory of a CTK used by more than one individual. Missing tools will be identified to the supervisor. Supervisors are responsible for tool and equipment accountability and control. When a person removes a tool or piece of equipment, they are responsible for that item until it is returned. Local publications will provide procedure for accountability when items are removed. Supervisors will be responsible to initiate lost tool procedures.
10.4.2.2.1.2.3. (Added) Supervisory Inspection. Supervisors are responsible for ensuring all tool kits assigned to them and their subordinates are inspected. The supervisor's inspections will include verification of the TKCRL and supplemental list against the tool kit contents as well as ensuring each item has a matching identification number. Documentation of the supervisor's inventory on the AFMC Form 309 or MIS is required. The required supervisor's inspections are as follows:
10.4.2.2.1.2.4. (Added) At least once every 365 days the supervisor or his/her designated representative (the designated representative cannot inspect their own tool box) must inspect the tool boxes under their control for the following areas:
10.4.2.2.1.2.5. (Added) Ensure all items are properly Shadowed/Inlayed/Silhouetted/Outlined.

10.4.2.2.1.2.6. (Added) Ensure all items are properly marked or etched; excluding TMDE, items too small to mark/etch, and items impractical to mark/etch.
10.4.2.2.1.2.7. (Added) Ensure kit content matches documentation (matching TKCRL and supplemental list to kit contents, loaned items to kit contents, and lost/broken/missing item documentation to kit contents).
10.4.2.2.1.2.8. (Added) Ensure tool kit is free of Foreign Objects.
10.4.2.2.1.2.9. (Added) Ensure no more than one personal drawer is used. Only personal items will be stored in the personal drawer.
10.4.2.2.1.2.10. (Added) Ensure all tools are serviceable and if they are not, ensure proper documentation and replacement action is taken.
10.4.2.2.1.2.11. (Added) Ensure TMDE is not overdue for calibration IAW TO 00-20-14, <i>Air Force Metrology and Calibration Program</i> .
10.5.1.3.1. Tools too impractical to mark (i.e. hacksaw blades, rulers, due to method of use, size, or composition of material) will be identified by an “N” (asterisk or some other method to clearly identify those tools defined in the local publication) on TKCRL or supplemental listing. Tools will be controlled and lost item procedures will apply. A list of tools too small or impractical to mark will be approved by the center tool manager and kept on file in the tool issue center.
10.5.1.3.2. (Added) Items stored inside a tool that are unattached (such as a screw driver with bits, etc. stored inside or a knife with extra blades stored inside), and those items are considered a part of that tool, then the individual items will be marked with the same ID number as that tool. Tools that have items attached to it (such as a knife with 5 blades) are considered as one tool.
10.5.1.3.3. (Added) Items that are stored inside an unattached tool (see the example in para. 10.5.1.3.2. of this instruction) will be marked as: (example) one screw driver and five bits on the TKCRL.
10.5.7. The proper tool issue center, PSC, or back shop may include multiple locations within an organization, but the EID assigned shall be traceable back through FEMS or applicable MIS.
10.5.7.1. (Added) Tool Box/Kit Marking. Marking of tool boxes/kits will be done by a method that is legible. All tool kits (containers, boxes, rollaways, etc.) along with each tool and other contents assigned (on TKCRL supplemental list or locally developed inventory) to the tool kit will be marked with the same number.
10.5.7.2. (Added) Local publications will define PSC numbering methodology and configuration.
10.6. Requests for approval of locally manufactured or developed/modified tools must include a

description of the item and its intended use, a list of materials required, cost, and procedures for manufacturing the tool. Include an example, photo or drawings. The engineering office will keep copies of drawing, photos and documentation of all approved local manufactured or developed/modified tools and equipment. Tools/equipment identified and approved for construction in a formal DoD TO are considered pre-approved and do not require approval. Production shops shall ensure that all tools and equipment that is utilized in the processes in their shops that are not referenced in technical data have been authorized by Locally manufactured tool and equipment review procedures.
10.7.1.2. Common accessories, back shop test stations/stand accessories, TMDE, and support equipment hooked up to an aircraft, end item or requires extensive set-up time to perform a task are not required to be secured/locked if left unattended for short periods of time. Management will ensure the means (securing devices) and the methods (local publications) are provided to each person responsible for a tool kit or equipment supplement.
10.7.2. (Added) Maintenance Support Group/Authorized Contractors Responsibilities:
10.7.2.1. (Added) Maintain a supply of common hand tools and other items as required to satisfy normal daily demands for the following:
10.7.2.1.1. (Added) Replacement of unserviceable items.
10.7.2.1.2. (Added) Issue of temporary items.
10.7.2.1.3. (Added) Issue of permanent items.
10.7.2.2. (Added) Determine reorder points using The AFMC authorized tool management system.
10.7.2.3. (Added) Label bins with the item number, nomenclature, and bin location as a minimum.
10.7.2.4. (Added) Manage assigned TMDE IAW TO 00-20-14, <i>Air Force Metrology and Calibration Program</i> and local publications.
10.7.2.5. (Added) Assemble requested tool kits utilizing a given template or Table of Allowance (TA).
10.7.2.6. (Added) Issue tool kits using the TKCRL as the permanent record of issue.
10.7.2.7. (Added) Control TKCRL IAW this instruction and local publications.
10.7.2.8. (Added) Maintain a file copy of turned-in kit TKCRL for a period of at least two years.

10.7.2.9. (Added) Issue no more than one individual tool kit, per technician, on a permanent basis except as authorized IAW local publications.
10.7.2.10. (Added) Ensure no credit is given against any TKCRL for any unmarked or misidentified tools turned in to the tool center.
10.7.2.11. (Added) Ensure employees sign AFMC Form 311, <i>Certificate Of Responsibility for Government Property</i> , prior to issue of the tool kit IAW AFI 23-111, <i>Management of Government Property in the Possession of the Air Force</i> .
10.7.2.12. (Added) Support Maintenance Group TDY Teams with necessary tools and TMDE on a short-term loan for the duration of the TDY IAW local publications.
10.7.2.13. (Added) Notify the Maintenance Groups of all overdue tools IAW local publications.
10.7.2.14. (Added) Ensure tools are disposed through the Defense Reutilization and Marketing Office (DRMO) or demilitarization contractors.
10.7.2.15. (Added) Ensure tools are not acquired by any organization other than Maintenance Support Group/Authorized Contractor without written (email will suffice) approval IAW local publications.
10.7.3. (Added) Maintenance Group Responsibilities:
10.7.3.1. (Added) Designate custodial responsibility for production managed PSC's.
10.7.3.2. (Added) Prepare documentation justifying specific hand tool requirements IAW local publications.
10.7.3.3. (Added) All tools purchases must be reported to Maintenance Support Group personnel for input into the AFMC authorized tool management system for accountability and tracking purposes.
10.7.3.4. (Added) Notify the Maintenance Support Group tool center in writing of a tool kit requirement before the employees projected start/need date. As a minimum, this request will provide the employee's name, employee's ID number, phone number, resource Control center (RCC) and the required template.
10.7.3.5. (Added) Ensure employees turn in their tool kits to the tool center prior to RCC reassignment, task changes requiring a different template, or termination of employment.
10.7.3.6. (Added) Ensure supervisors account for all items on the supplemental list prior to turning in tool kits to Maintenance Support Group/Authorized Contractor. Turn-in supplemental items to the issue PSC or tool/equipment monitor.

10.7.4. (Added) Production Support Centers (PSC). The PSC will be in a secured and controlled area and will be used for the purpose of maintaining and stocking CA/CRL tooling/equipment, locally manufactured, modified, or special end item unique tools and equipment. PSC will be secure so that the only access is through lockable doors. The PSC supervisor authorizes access to the PSC. PSC may store/order/issue consumable or expendable type items needed to support the production efforts of a particular unit or weapon system.
10.7.4.1. (Added) PSC Inventory. Two types of inventories are required: End of Shift and annual.
10.7.4.1.1. (Added) End of Shift Inventory is required and will be addressed in local publications.
10.7.4.1.2. (Added) Annual Inventory. An annual comprehensive inventory shall be conducted of all assigned tools, tool kits, common accessories, TMDE and support equipment. The purpose of this inventory is to perform an extensive inspection to include: condition, identification markings and accuracy of PSC inventory. Inspect all tools for serviceability according to TO 32-1-101, <i>Use and Care of Hand Tools and Measuring Tools</i> . A record copy of the inventory list and inspection results will be kept in the PSC. Document the inventory on an inventory listing, an AFMC Form 309, or in a MIS. The date of the inventory will be documented and kept on file at the PSC or tool issue center according to local procedures and used to track when the next annual inspection is due.
10.7.4.2. (Added) Temporary Loaned Tools, Tool Kit, Common Accessories and Support Equipment. PSC/tool issue centers will ensure tools issued on an as-needed basis will be returned to the issue point. The AFMC authorized tool management system will be used by all PSCs and tool issue centers to ensure an audit trail exists on all items on loan. Items containing multiple parts will have an attached inventory list. The issuing tool center and the individual obtaining the loan will perform a joint issue and return inventory.
10.7.4.2.1. (Added) During the duration of the loan, the individual signing for the loan item must perform all required inventory and user maintenance actions. A hand receipt or computer tracking system will be used to track to whom the tool was loaned. These items will not be on loan for more than 30 calendar days. If tools are required for more than 30 calendar days, the location of the tool must be physically verified and the loan must be renewed IAW local publications.
10.7.4.2.2. (Added) Organization issuing tool kits will maintain a file of the inventory or TKCRLs used for daily issue in the issue center. A copy of the inventory or TKCRL will be used by the issuing and receiving personnel for issue and turn-in inventories. Tool kits will be issued with the ability to be secured and include an AFMC Form 309. If a tool kit is signed out for more than one shift, an inventory of that kit will be documented on an AFMC Form 309 by the using technician.
10.7.5. (Added) Point of Use Stations (POUS).

10.7.5.1. (Added) POUS may be identified as a vending machine type of equipment, a cabinet, a vidmar, a locker system, a controlled room, a tool box, or any combination of the various types.
10.7.5.2. (Added) Determination as to the POUS contents and management will be IAW the minimum requirements of Chapter 10 of this instruction and local publications.
10.7.5.3. (Added) The POUS database or inventory shall, at a minimum, capture the NSN or part number, nomenclature, minimum or maximum levels, quantity on hand of each item contained in the POUS, and shall have a process which is auditable. The database shall also allow the user to capture any required inspections IAW this supplement.
10.8.1.8. Lost/Found Tool/Item Procedures. If a lost tool/item is not found within one hour, an AFMC Form 310 <i>Lost/Found Item Report</i> or AFMC authorized MIS will be initiated IAW local publications.
10.8.1.11. (Added) Local publications will identify quarterly lost tool/item reported metrics and analysis requirements. At a minimum the following will be reported to Squadron, Wing and Group or equivalent levels and Center Tool Control Manager:
10.8.1.11.1. (Added) Total tools/item lost year-to-date.
10.8.1.11.2. (Added) Total tools/items found year-to-date.
10.8.1.12. (Added) Documentation. Documentation of lost tools/items not found will be maintained a minimum of two years at a function determined by local publications.
10.8.1.13. (Added) Off Base Reporting. Deployed TDY teams will coordinate with the host base director or equivalent on all lost tools/items not found. AFMC Form 310 will be completed and a copy provided to the appropriate Tool Control Manager IAW local publications.
10.9. (Added) Training.
10.9.1. (Added) Overview. For a strong, viable tool and equipment management program, all personnel who use tools and equipment in their daily work requirements must receive appropriate training. This training must stress all aspects of tool control including individual responsibilities and the consequences of noncompliance. Training programs will be a combination of class room, on-the-job training and supervisory briefings.
10.9.2. (Added) Requirements. Each ALC and AMARG will use the AFMC standard Tool Control and Accountability Course for initial and for refresher training. The command courses will be modified to include local procedures outlined in the units tool control publication. All employees who work with tools and equipment (including Quality Assurance), and all levels of their management (squadron level or equivalent and below) will receive the initial tool control course and refresher training. Initial training will be requested within 30 days of assignment to a maintenance position.

10.9.3. (Added) Documentation. All tool and equipment management training will be documented in the AFMC authorized MIS.
10.9.4. (Added) Initial Work Center Briefings. Supervisors will conduct an initial work center specific tool and equipment management briefing to newly assigned individuals prior to starting work. Supervisors will cover accountability procedures and lost tool/item procedures as a minimum. Work center briefing will be documented per local publication. Ensure individuals (including contractors) TDY, transferred or loaned from another unit receive a work center briefing prior to beginning work in that area.
10.9.5. (Added) Forms. Locally devised forms used in lieu of mandated forms, will not be used without approval of HQ AFMC/A4DA. All other locally authorized forms required will be identified in a local publication.
Chapter 11 - MAINTENANCE SUPPLY SUPPORT
11.1. General. Not applicable. ALC Maintenance Wing's (Depot) will follow AFMCI 21-130, Depot Maintenance Material Control and AFMAN 23-110, USAF Supply Manual for material procedures.
Chapter 12 - WING WEAPONS MANAGER AND WEAPONS STANDARDIZATION
This section intentionally left blank. No supplemental data necessary.
Chapter 13 - MOBILITY AIRCRAFT DEFENSIVE SYSTEMS LOADING POLICY
This section intentionally left blank. No supplemental data necessary.
14 - ADDITIONAL MAINTENANCE REQUIREMENTS AND PROGRAMS
DEV 14.1.1.3. ABDR support shall be accomplished IAW AFI 61-101, <i>Scientific/Research and Development Applied Technology Council</i> and AFI 63-101, <i>Acquisition and Sustainment Life Cycle Management</i> .
DEV 14.1.1.3.1. Not applicable.
DEV 14.1.1.3.2. Not applicable.
DEV 14.1.1.3.3. Not applicable.
DEV 14.1.1.3.4. Not applicable.
DEV 14.1.1.3.5. Not applicable.

14.7.2.3. (Added) AGE personnel will purify AGE equipment only. Hydraulic systems and test stands will be purified by hydraulic support personnel.
14.11.1.1. The WG/CV, ALC/CV, or CA will appoint a TSgt (or above), or civilian equivalent, or contractor if designated by the Performance Work Statement (PWS), with at least 1 year experience in the maintenance field to the position of DOP monitor and their name will be posted in a prominent place within the unit on a locally developed visual aid.
14.11.1.5.1. The Center DOP monitor will be responsible for reporting.
14.11.1.5.4. (Added) Tenant Organizations. The Center DOP monitor will develop procedures to collect DOP incident reports from tenant organizations.
14.19. Foreign Object Damage (FOD) Prevention Program. The ALCs CV will publish local directives to supplement the minimum requirements in this instruction with detailed guidance and procedures. Local directives will outline organizational responsibilities for AFMC flight lines, runways, taxiways, parking ramps, and outside maintenance areas that are shared with the Air Base Wing and tenant units.
(Added) NOTE: In the event that an ALC does not have a CV assigned, all Center CV responsibilities referenced in AFI 21-101, and AFMC Supplements, will be assumed by the Center CA or Center CC designee. Designation will be in writing and individuals will be in the grade of 0-6/GS-15 or higher.
14.19.1. Definition. FOD: Categories of FO areas. There are two categories of FO areas: critical and non-critical.
14.19.1.1. (Added) FO critical areas are maintenance areas where aircraft maintenance is performed (example: jet engine maintenance, fuel cell maintenance and major sub-assemble maintenance).
14.19.1.2. (Added) Non-critical FO areas are all other areas not defined in paragraph 14.19.1.1. All non-maintenance areas are considered low-potential FO areas. See paragraph 14.19.1.3.
14.19.1.3. (Added) Local publications shall be developed to identify areas that the Maintenance Wing (MXW) Commander or Deputy designates as critical/non-critical FO areas.
14.19.2.1. Plug or cap all opening, ports, lines, hoses, electrical connections, and ducts on aircraft, engines, munitions, missiles, drones, space systems, support equipment, AGE, trainers, or components to prevent FO from entering these systems any time maintenance is not being performed (i.e. end of task, end of shift) and IAW applied technical data.
14.19.2.1.1. (Added) Tear-down processes (those processes that will completely tear down the item prior to return to service) to include the following processes are not required to have components capped or plugged during the following operations: cleaning, NDI, blast, machining, welding, heat treat, plasma, spray, paint, plating, x-ray, eddy current, CMM, and induction

inspection. Components that cannot be inspected 100 percent to ensure FO free will still require open cavities to be capped, plugged, taped off, etc. All components will be inspected for FO prior to reassembly. Any assembly that requires minor repair will be capped and plugged at all times.
14.19.2.1.2. (Added) Electro-static discharge (ESD) sensitive equipment requires the use of ESD caps/covers IAW Technical Order (TO) 00-25-234, <i>General Shop Practice Requirement for the Repair, Maintenance and Test of Electrical Equipment</i> . Local ESD directives and tech data may outline stricter controls.
14.19.2.2. In a test cell facility the bellmouth fixture will be used IAW the applicable weapon system TO.
14.19.2.4. Personnel will empty their pockets and remove all accessories when performing intake or exhaust inspections.
14.19.2.5. In addition to the parent document, restricted area badges will be secured with any of the following type devices: plastic armband; nylon neck cord with breakaway feature, or button with nylon macramé that can be securely affixed to the uniform. The use of metal on these items should be kept at a minimum, (i.e. clip or spiral key ring) and if used; ensure that it cannot be separated from the cord. They will also be removed when any other AFI/TO or hazardous situation is identified.
14.19.2.6. For all maintenance areas designated as FO critical areas, local publications shall be developed governing the wearing of hats, berets, badges, wigs, hairpieces, etc. Climate and safety will be considered. Identification badges shall be secured IAW paragraph 14.19.2.5. to prevent loss and possible FOD.
14.19.2.6.2. The ALCs shall follow guidelines for the proper wear of finger rings and other jewelry as outlined in AFOSHSTD 91-100, <i>Aircraft Flight Line-Ground Operations and Activities</i> , and the work center job safety analysis IAW AFI 91-202, <i>The US Air Force Mishap prevention Program</i> , which apply to personnel entering a designated maintenance area (usually indicated by yellow lines or other required markings). This includes administrative/support personnel visiting the work areas for any length of time.
14.19.2.6.3. Escort personnel shall brief visiting personnel on FOD procedures IAW locally developed checklist.
14.19.2.8. The containers shall have the word "FOD" stenciled in contrasting letters no smaller than two inches. Back shops may manufacture small FO containers that can be used when an area collection can is not feasible. All FOD containers, regardless of location, will be emptied when full or once a day.
14.19.2.9. Control of work order residue will be accomplished IAW AFMCI 21-130, <i>Depot Maintenance Material Control</i> .

14.19.2.11. FOD walks/sweeps are mandatory within areas designated as FO critical areas. Local publication will outline frequency and areas of responsibility.
14.19.2.11.1. (Added) FOD walks will be accomplished prior to towing aircraft through low-potential FO areas to ensure damage does not occur to aircraft tires.
14.19.2.17. All Center government owned vehicles, contractors, privately owned vehicles, and any other Center vehicle operators, will perform a FOD inspection on all towed equipment, vehicles, vehicle tires, and open cargo areas of vehicles prior to entering the runway, taxiway, flight line, or other areas directed by the ABW or Center FOD manager. When inspecting tires, ensure a roll-over check is completed to ensure the entire surface is inspected for FOD, including the unseen area in contact with the pavement. Coordination between the ABW FOD Manager, Center FOD/DOP Manager, and Airfield Management is required to ensure FOD inspection checkpoints have signs and are clearly marked.
14.19.2.17.1. (Added) Vehicle operators departing the paved surface will perform a FOD inspection on all equipment and vehicle tires immediately upon re-entering the paved surface of runways, taxiways, flight lines, and aircraft parking ramps areas.
14.19.2.18.1. (Added) Screws shall be coated with a thread locking compound to prevent them from backing out and covered with RTV.
14.19.2.21. Leave inspection and load tolerance tags attached.
14.19.2.23. (Added) Supervisor Briefing.
14.19.2.23.1. (Added) Initial work center briefing. Supervisors will ensure newcomers receive briefing on work center specific FOD/DO awareness and prevention practices prior to starting work in their assigned work area. Work center FOD/DO briefing will be documented per local publications. Ensure individuals who are TDY, transferred, or loaned from other units receive a work center FOD/DO briefing prior to beginning work in their area.
14.19.2.23.2. (Added) Quarterly briefing. Supervisors shall quarterly brief personnel who, in the performance of their assigned duties, work in maintenance area on FOD/DO awareness and prevention. Keep personnel attendance record for one year. Include the briefing as part of the unit's periodic news or staff meetings. Include a review of the committee minutes of the last meeting and any unique requirements that could affect FOD/DO awareness and prevention, if applicable.
14.19.2.24. (Added) Publicity. Publicity is a key element of an effective FOD Program. Information on posters and other materials to establish and maintain an awareness of the need to prevent FOD/DO can be obtained from the Center FOD Manager. Competitive programs in FOD/DO awareness and prevention between wing, group, squadron, and shops are strongly encouraged.

14.19.2.25. (Added) Report all cut tires to aircraft management immediately, and inspect the aircraft taxi route from the parking ramp up to the taxi way for possible FO. Airfield management should inspect taxiways and runways for possible FO.
14.19.3.1. An Alternate Center FOD Monitor (or Manager) shall also be appointed, in writing, meeting all of the qualification requirements of the Center FOD Monitor (or Manager). The FOD Program Monitor /Alternate FOD Monitor may also be a maintenance officer. The FOD Monitor will be assigned on a full-time basis, reporting directly to the Center CV.
14.19.4.4.1. (Added) Recommend the Center FOD monitor does attend the Jet Engine Mishap Investigation Course.
14.19.4.5. Coordinate with Center safety or wing safety and maintenance to ensure a team of appropriate personnel investigates each FOD/DO incident that's not reportable under AFI 91-204, Safety Investigations and Reports.
14.19.4.5.1. (Added) Provide FOD items of interest to all subordinate focal points.
14.19.4.5.2. (Added) Review the Center's FOD/DO incidents and analyze the reports and other data for trends that identify areas requiring management action.
14.19.4.5.3. (Added) Develop and present a FOD agenda at the quarterly Center FOD Awareness and Prevention Committee meeting (monthly if deemed necessary by the Center FOD commander or designed representative). Ensure meeting minutes are published and distributed to the Center CV or CA and each committee member.
14.19.4.5.4. (Added) Attend the annual command FOD meeting and encouraged to attend the annual National Aerospace FOD Prevention Conference.
14.19.4.5.5. (Added) AMARG only. Report and coordinate any known or suspected FOD/DO occurring on the flight line, runways, taxiways, or parking ramps to the host base FOD monitor.
14.19.4.5.6. (Added) Coordinate FO prevention needs with the airfield manager and other agencies when construction is in progress on or near maintenance areas or other areas where FOD incidents may occur.
14.19.4.5.7. (Added) Inform all Center agencies of FOD hazards.
14.19.4.5.8. (Added) Attend subordinate Wing FOD prevention committee meeting.
14.19.4.5.9. (Added) Develop a standard FOD continuity book requirement for all FOD focal points. Continuity book requirements shall be developed that permits a newly appointed person to comply with existing policy and procedures with minimum assistance. The requirements shall be outlined in local publications. The continuity book may be hard copy or in electronic format.

14.19.4.5.10. (Added) Each Wing/CC, Group/CC, and Squadron/CC or the CV, deputy or civilian equivalent, in a maintenance function appoints in writing a FOD/DO Prevention Focal Point for their organization. The FOD focal point shall:
14.19.4.5.10.1. (Added) Be at least a SSgt possessing an aircraft maintenance AFSC, or a civilian possessing an aircraft maintenance background. The FOD focal point person shall have at least one year experience and be knowledgeable of FOD policies and procedures.
14.19.4.5.10.2. (Added) Provide FOD information to FOD focal points in subordinate organizations (i.e. the Wing, Group, and Squadron focal points shall share information).
14.19.4.5.10.3. (Added) Conduct periodic FOD spot checks and report observations to the first line supervisor of the area of responsibility and to the Group division quality organization (these reports may be entered in the QIMSS, but will not be counted for the QA required inspections). Specify the frequency of FOD spot checks by each focal point in your local FOD supplement.
14.19.4.5.10.4. (Added) Attend Center FOD Program Committee meetings. The Wing FOD focal point (Group and Squadron, when requested), as a minimum, shall attend.
14.19.4.5.10.5. (Added) Contact Center FOD monitor on all FOD related issues and incidents within 8 hours of occurrence. FOD focal point will channel up all information through the next higher FOD focal point until the Center FOD monitor is notified. Reports from the FOD monitor are due to HQ AFMC/A4M within 24 hours of incidents occurrence.
14.19.4.5.10.6. (Added) Assist supervisors in developing FOD awareness and prevention briefings.
14.19.4.5.10.7. (Added) Review and update FOD continuity book based on requirements outlined in local publication.
14.19.4.5.10.8. (Added) Review Activity Inspection reports for adverse negative trends and make recommendations to the Center FOD Monitor.
14.19.4.5.10.9. (Added) Newly assigned FOD Monitor and Focal Point shall:
14.19.4.5.10.9.1. (Added) Review all applicable program instructions, supplements, and HQ AFMC LCAT FOD checklist. Validate locally developed self-inspection checklists within 30 days of assigned duties.
14.19.4.5.10.9.2. (Added) Review and validate FOD program continuity books. Develop and maintain program continuity book if not made available at time of assignment. Develop continuity book IAW local publication.
14.19.4.6. (Added) Command FOD Manager. The Command FOD Manager is located at HQ AFMC/A4M and shall:

14.19.4.6.1. (Added) Conduct annual AFMC FOD meetings.
14.19.4.6.2. (Added) Clarify policy and assist units in resolving FOD issues.
14.19.4.6.3. (Added) Work with other MAJCOM FOD managers to resolve FOD issues between the Centers and owning commands.
14.19.4.6.4. (Added) Notify lead command of FOD incidents.
14.19.5.1. FOD Investigation. Investigate each FOD incident to determine the cause and preventive action. Immediately remove from service any aircraft, missile, drone, support equipment, engine, or component unsafe for use when known or suspected FOD is discovered. The end item will be impounded until the FOD investigation is complete.
14.19.5.5. HQ AFMC/A4M and A4D will assist in resolving any questionable FOD issues.
14.19.5.6.1. Send FOD/DO reports electronically to AFMC/A4M and AFMC/A4D workflow.
14.19.5.6.1.1. (Added) Each unit will establish its own FOD/DOP control numbers.
14.19.5.6.1.2. (Added) All DCMA managed units at contracted facilities will report FOD incidents to Command FOD/DOP Manager.
14.19.5.7. The preventable FOD standard for AFMC is 3.0.
14.19.6. Additionally, the following will be considered for minimum attendance at the FOD Prevention Committee Meeting: Center FOD Monitor, the designated Union representative, Center or Wing Maintenance Training, Flight test representative, Contracting (As applicable), Center tool control manager, and the ABW/CV.
14.19.6.1. In addition to the agenda items, the minutes will include as a minimum a list of attendees and absentees. Attendees list will identify the wing FOD monitor and provide functional address symbol and duty phone number for all personnel. Meeting minutes will be made available to FOD committee members.
14.19.6.1.14. (Added) Status of action items from previous meetings. Action items are carried in an “open” status until they are closed or completed.
14.19.6.1.15. (Added) Action items from subordinate wing FOD Committee meeting and from the host base ABW FOD committee at AMARG.
14.19.6.1.16. (Added) All FOD/DO occurrences since last meeting. Break out data per mission design series (MDS).

14.19.6.1.17. (Added) FOD/DO metrics showing cumulative FOD data and trends from the beginning of the fiscal year (FY).
14.19.6.1.18. (Added) Customer reported FO, FOD, and DO on aircraft, missiles, drones, engines, or other components and equipment processed at the ALCs within TO 00-35D-54, <i>USAF Deficiency Reporting and Investigation System</i> .
14.19.6.1.19. (Added) Lessons learned from other MAJCOM, base, Centers, and unit FOD program committees.
14.19.6.1.20. (Added) Show-and-tell items of interest, if applicable, (i.e. FOD damage, FO found during FOD walks, DO, etc.).
14.19.8. (Added) FOD Discovered During Programmed Depot Maintenance/Functional Test (PDM/FT). In addition to the initial reporting procedures, the Center FOD manager or designated authority will notify the owning unit no later than 24 hours after occurrence of all FOD incidents discovered during PDM/FT of aircraft, missiles, drones, engines, or components. The Command FOD manager will notify the owning MAJCOM. The Center FOD manager will annotate all evaluated and repaired FOD in applicable WCDs IAW Table A14.7. or AFTO Form 781/AFTO Form 95 IAW 00-20-1 or CEMS IAW TO 00-25-254-1/2.
14.19.9. (Added) FOD Discovered Upon Removing Aircraft From Long-Term Storage at AMARG. A formal FOD report is not required if the FOD was discovered upon removing the aircraft from long-term storage and was annotated in historical records prior to induction to AMARG. In the event FOD is discovered upon removing aircraft from long-term storage and cannot be verified through historical records, the AMARG FOD manager will provide a courtesy notification of the FOD to the Command FOD manager. The FOD will not be charged against the Center's FOD rate.
14.19.10. (Added) The Center FOD monitor or alternate shall coordinate with the Impoundment Officer and Center Safety or wing safety to ensure a team of appropriate personnel investigate each incident of FOD. If the FOD mishap is chargeable, the Center/Wing Safety Office will establish the investigation team. Safety investigations take priority over any corresponding investigations. The team submits a report to the FOD monitor and to Center Safety. The Center FOD monitor shall be involved in the investigation to ensure that corrective actions are initiated. The investigation team performs the following actions and submits a report to the Center FOD monitor:
14.19.10.1. (Added) Review maintenance records for items that may have contributed to the FOD incidents.
14.19.10.2. (Added) Use X-ray, borescope and other state-of-the-art equipment to locate FO in an inaccessible area.
14.19.10.3. (Added) Perform a thorough inspection of the aircraft for missing aircraft components (i.e. screws, rivets, fasteners, etc.) for installed engine FOD. Perform a thorough

inspection of the run pad or ramp area and within 25 feet of the aircraft intake for FOD damage that occurred during aircraft ground runs. For FOD incidents discovered after flight, perform a thorough inspection of the parking location, taxiways, and where the aircraft launched from for FO sources that may have attributed to the incident.
14.19.10.4. (Added) For an F-15 aircraft sustaining engine FOD caused by an unknown source, extend the variamps, thoroughly inspect all accessible components and areas within the variamps cavity, close variamps, X-ray variamps, and lower louver areas IAW applicable TO. Compare these X-rays with previous X-rays of the aircraft to determine movement or missing items.
14.19.10.5. (Added) Perform an inspection of the uninstalled engine, test stand, test equipment, etc., for FO sources for FOD that occurred at the test facility.
14.19.10.6. (Added) Immediately perform a tool kit and equipment inventory upon discovery of FOD. Review recent Lost/Item Report for relevance to FOD incidents.
14.19.10.7. (Added) Use the D043A, <i>Master Item Identification System</i> , supply system to determine costs of parts and pieces when figuring cost of FOD damage. Contact the Command FOD Manager for further assistance if required.
14.19.10.8. (Added) Contact the Command FOD manager if owning MAJCOM or unit directs shipment of the damaged engine before the investigation is completed. The Command FOD manager will coordinate the completion of the FOD investigation with the owning MAJCOM or unit.
14.19.10.9. (Added) Locally developed incident FOD checklist should be used to enhance FOD investigations.
14.19.10.10. (Added) ALCs will reimburse owning units for FO related damage incurred which were found to be caused by ALC negligence. The Wing/Group/Squadron responsible for the reimbursement will be determined by the Command FOD Manager.
14.19.10.11. (Added) Tenant Organizations. The Center FOD monitor will develop procedures to collect FOD incident reports from tenant organizations.
14.19.11. (Added) FOD Awareness and Prevention Training.
14.19.11.1. (Added) Conduct and document initial and refresher (annual) FOD awareness and prevention training for personnel who, in the performance of their assigned duties, work in or travel through maintenance areas. OO-ALC, Hill AFB, UT, is the lead center for developing and updating the Maintenance Wing FOD training.
14.19.11.2. (Added) Initial training will consist of formal classroom training. Use AFMC course for the FOD Awareness training (Initial). Personnel will receive initial FOD awareness

and prevention training within 30 days of assignment to the work center.
14.19.11.3. (Added) Refresher training is required annually (not to exceed 12 months).
14.19.11.4. (Added) Local training shall be developed to augment the AFMC FOD training courses that identify local procedures, requirements and directives. The ALCs, with several types of aircraft assigned and/or possessed (i.e. PDM aircraft) will have all aircraft incorporated into one center training program. Training should emphasize the following minimum FOD awareness and prevention subjects:
14.19.11.4.1. (Added) Procedures unique to the assigned and/or possessed aircraft.
14.19.11.4.2. (Added) Lessons learned, common causes of FOD and those which are peculiar to the MSD, other major end items, support equipment, engines, or components assigned to or serviced by the organization.
14.19.11.4.3. (Added) Hardware and tool control and accountability policies for end of task, end of shift, and transfer at work site.
14.38. (Added) Production Acceptance Certification (PAC) Program. The PAC Program documents employee certification to perform and accept completion of assigned work. Employees certify (stamp) that the work they performed meets all technical data, safety, and other applicable directives. Further maintenance training information can be found in AFI 36-2232, AFMC Sup 1, <i>Maintenance Training</i> .
14.38.1. (Added) Supporting System. Documentation to track employees' PAC qualification and certification shall be maintained in TSS-PAC.
14.38.2. (Added) Special Skills Qualification (SSQ). SSQs are skills so specialized they require formal training and proficiency demonstration. Most of these skills are governed by military specifications, higher level regulatory guidance, are safety related, or have a significant impact on cost. SSQ is a prerequisite for PAC task certification for those skills established by this supplement. Additional requirements may be established locally by the Maintenance Wings.
14.38.3. (Added) PAC Program Applicability. The PAC program applies to all depot maintenance personnel certifying WCDs. All depot production WCDs, as described in Chapter 19 (Added) shall be stamped and dated by a PAC-certified employee. Other documents directly supporting depot production are designated and certified as locally determined. These training and PAC documentation requirements apply to the internal PMEL supporting the on-site test equipment and other on-site production equipment covered by TO 00-20-14, <i>Air Force Metrology and Calibration Program</i> .
14.38.4. (Added) PAC Responsibilities
14.38.4.1. (Added) Headquarters AFMC Depot Maintenance Division (HQ AFMC/ A4D). HQ AFMC/A4D is the OPR for the Depot Maintenance PAC and SSQ Programs. HQ AFMC/A4D

shall:
14.38.4.1.1. (Added) Provide guidance and set policy for AFMC Depot Maintenance PAC and SSQ Programs.
14.38.4.1.2. (Added) Direct and approve command-wide Depot Maintenance PAC initiatives.
14.38.4.1.3. (Added) Promote standardization of SSQs for common MDS across AFMC Depot Maintenance Wings.
14.38.4.1.4. (Added) Promote standardization of PAC Programs across AFMC Depot Maintenance Wings.
14.38.4.1.5. (Added) Provide resources for TSS-PAC.
14.38.4.1.6. (Added) Ensure compliance with Depot Maintenance PAC directives and policies.
14.38.4.2. (Added) AFMC Maintenance Training and PAC Working Group. The AFMC Maintenance Training and PAC Working Group are chaired by HQ AFMC/A4D with representation from HQ AFMC/A1 Wing Maintenance Training Managers, Wing PAC Program Managers, Wing CTP Managers, and other representatives as required. As a minimum, the Working Group shall:
14.38.4.2.1. (Added) Advise HQ AFMC/A4 on depot maintenance training and PAC issues.
14.38.4.2.2. (Added) Resolve depot maintenance training, PAC and SSQ related problems.
14.38.4.2.3. (Added) Propose standardization of depot maintenance training PAC and SSQ activities.
14.38.4.2.4. (Added) Establish procedural guidance for implementation of this supplement and AFMC/A4 depot maintenance training PAC and SSQ initiatives.
14.38.4.2.5. (Added) Process revisions to this supplement and input on all other directives that impact depot maintenance training, PAC and SSQ Programs.
14.38.4.2.6. (Added) Recommend Lead Maintenance Wing assignments for AFMC command SSQs.
14.38.4.3. (Added) Wing Maintenance Training and PAC Council. The Wing Maintenance Training and PAC Council are chaired by the MXW/CC/DV or designee with representation from the Maintenance Groups. The Center Education and Training Office, the AFGE Local, and other senior leaders are represented when deemed appropriate. The Wing Maintenance training and PAC Council shall:

14.38.4.3.1. (Added) Meet at the call of the chair (at least semi-annually).
14.38.4.3.2. (Added) Ensure Wing compliance with depot maintenance training PAC and SSQ directives and policies.
14.38.4.3.3. (Added) Resolve Wing depot maintenance training, PAC and SSQ related problems.
14.38.4.4. (Added) Wing Maintenance Training and PAC Working Group. This Working Group is co-chaired by the Wing Maintenance Training Manager and Wing PAC Manager and includes the Wing CTP Manager, Group Training Managers, Group PAC Managers, an AFGE Local representative and other representatives as applicable. As a minimum, the Wing Maintenance Training and PAC Working Group shall:
14.38.4.4.1. (Added) Advise organizations on depot maintenance training, PAC and SSQ issues.
14.38.4.4.2. (Added) Standardize wing depot maintenance training PAC and SSQ activities as appropriate.
14.38.4.4.3. (Added) Participate in the development of local supplements to this instruction.
14.38.4.5. (Added) Wing PAC Program Manager. Each MXW/CC/DV designates in writing a Wing PAC Program Manager. The PAC Program Manager shall:
14.38.4.5.1. (Added) Serve as OPR on PAC and SSQ issues during the development and revision of directives.
14.38.4.5.2. (Added) Co-Chair the Wing Maintenance PAC Working Group with the Wing Maintenance Training Manager.
14.38.4.5.3. (Added) Serve as liaison between Wing and HQ AFMC on PAC and SSQ related issues.
14.38.4.5.4. (Added) Ensure Wing compliance with PAC and SSQ directives and policies by providing guidance and setting policy for the Wing PAC Program.
14.38.4.5.5. (Added) Assist Maintenance Groups with PAC Program implementation and elevate PAC problems to higher authority at the Wing and HQ AFMC/A4D as needed.
14.38.4.5.6. (Added) Administer all command and local SSQs, to include approving the development, revision, and revalidation of SSQ guides and worksheets.
14.38.4.5.7. (Added) Establish local SSQs as required.
14.38.4.5.8. (Added) Forward locally designated SSQs to HQ AFMC/A4D with copies to all

AFMC Wing PAC Program Managers.
14.38.4.5.9. (Added) Process waiver and deviation requests to this and other AFMC or higher directives on behalf of the Wing when such requests relate to the PAC and SSQ Programs, advise organizations involved of higher headquarter decisions, and maintain copies on file for reference and audit purposes.
14.38.4.6. (Added) Maintenance Group Commanders (MXG/CC/DD) will:
14.38.4.6.1. (Added) Appoint in writing a Group Training Manager, Group PAC Program Manager, and other officials deemed necessary to effectively implement the Depot Maintenance Training PAC and SSQ programs within the Group.
14.38.4.6.1.1. (Added) A copy of the Group PAC and Training Managers appointment letters will be provided to the Wing PAC and Training Managers.
14.38.4.6.2. (Added) Designate SSQ Officials in writing, according to this supplement and local publications.
14.38.4.6.3. (Added) Provide subject matter experts in support of SSQ, courseware, and Civilian Training Plan development, review and revision.
14.38.4.6.4. (Added) Ensure Group compliance with depot maintenance training PAC and SSQ directives and policies.
14.38.4.6.5. (Added) Review and analyze monthly training status reports for Recurring Training Requirements (RTR) over dues, no-shows, and training backlog to determine corrective actions.
14.38.4.6.6. (Added) Review and analyze monthly PAC program status reports for SSQ overdues, and program compliance to determine corrective actions.
14.38.4.6.7. (Added) Participate on the Wing Maintenance Training and PAC Council.
14.38.4.7. (Added) Group PAC Program Manager. The Group PAC Program Manager shall:
14.38.4.7.1. (Added) Serve as a member of the Wing Maintenance Training and PAC Working Group.
14.38.4.7.2. (Added) Serve as liaison between production Group and Wing PAC Manager on issues related to the PAC and SSQ Programs, including TSS-PAC.
14.38.4.7.3. (Added) Assist supervisors with PAC and SSQ Program implementation (to include qualification, certification, and documentation) and elevate PAC issues to the Wing PAC Program Manager as needed.

14.38.4.7.4. (Added) Manage TSS-PAC for the Group.
14.38.4.7.5. (Added) Assist supervisors in identifying PAC and SSQ tasks.
14.38.4.7.6. (Added) Administer all Group SSQs, to include approving the development, revision, and revalidation of SSQ guides and worksheets.
14.38.4.7.7. (Added) Provide monthly PAC program status reports for SSQ overdues and program compliance to the Production Group Chief and the Wing PAC Program Manager.
14.38.4.7.8. (Added) Maintain copies of all applicable SSQ Qualification Official appointment letters.
14.38.4.7.9. (Added) Maintain completed SSQ proficiency worksheets for a minimum of one year.
14.38.4.8. (Added) Maintenance Supervisor. The maintenance supervisor is ultimately responsible for training, qualification and certification of assigned maintenance personnel. The maintenance supervisor shall:
14.38.4.8.1. (Added) Utilize TSS-PAC, ETMS Web and/or other AFMC-authorized automated systems to identify training and qualification requirements/completions.
14.38.4.8.2. (Added) Identify the PAC tasks associated with work performed in areas of responsibility and verify that tasks are documented in TSS-PAC; work with the Group PAC Manager to correct deficiencies.
14.38.4.8.3. (Added) Ensure that all of the factors of production and the industrial environment are correct (such as training, safety, material, equipment, technical data, work documents, facilities, data systems, etc.) to enable the worker to produce quality products and services.
14.38.4.8.4. (Added) Certify and decertify employees using the specific certification and decertification criteria to ensure consistency among employees.
14.38.4.8.5. (Added) Perform an annual PAC certification review with each assigned employee.
14.38.4.8.5.1. (Added) Annual reviews shall be accomplished within 30 days of assignment and annually thereafter.
14.38.4.8.6. (Added) Make PAC records available to the gaining supervisor for loaned, transferred and TDY employees.
14.38.4.8.7. (Added) Notify their Group PAC/Training Manager when an employee is transferred, retired or terminated.

14.38.4.8.8. (Added) Ensure training/qualification requirements are identified and applied in TSS-PAC/ETR.
(Added) NOTE: The TSS-PAC/ETR Section II “Apply” box indicates active work center/mission training requirements that need to be met by employees.
14.38.4.9. (Added) Maintenance Employee. The maintenance employee shall:
14.38.4.9.1. (Added) Advise management of problems with technical data or other issues that impact technical or regulatory compliance. Management will maintain a written record of the advisement.
14.38.4.9.2. (Added) Give the supervisor and Group Maintenance Training Manager feedback on the training received.
14.38.5. (Added) PAC Task Identification. A task is a necessary activity in the completion of an industrial process or procedure involving a product or product-related service. All PAC tasks shall be identified in TSS-PAC. The applicable supervisor has the responsibility to ensure tasks are identified in TSS-PAC. PAC task standardization shall be accomplished to the extent possible for similar work. A PAC task shall be identifiable, trainable, and auditable. PAC tasks shall relate to the work described on the WCD. When the work performed does not lend itself to this kind of task definition, PAC tasks shall be structured to the nature of the service performed. This can be by skill, equipment, type of service, or other logical breakdown. SSQ tasks will be designated with the SSQ indicator.
14.38.6. (Added) PAC Training. Personnel who perform depot maintenance shall complete applicable training requirements prior to PAC certification. All training required for PAC task certification shall be documented in TSS-PAC.
14.38.6.1. (Added) Training Prerequisites for PAC Tasks. PAC prerequisites are training requirements that must be completed and maintained current for specific task certification. These include any AF, AFOSH STD, TO, or local instruction that directs requirements for specific tasks. Assignment of mandatory training prerequisites shall be documented in TSS-PAC Section II. All SSQ identified tasks shall be linked to the related SSQ. All task related to RTRs listed in Table A14.2. and any task related RTRs that are locally identified and listed in the local publications, shall also be linked to the tasks they support. Automatic decertification shall occur if task related recurring training or SSQ re-qualification is not accomplished in the required timeframe. Prerequisite linking is not required for general recurring training requirements.
14.38.6.2. (Added) Training and SSQ Prerequisites. Applicable training and SSQ prerequisites shall be assigned and documented in Section II of TSS-PAC. Training and SSQ prerequisites are not required to be linked to tasks.
14.38.7. (Added) Certification Official for Employee. The first level supervisor is the lowest level authorized to certify employees. Supervisors not qualified in a specific skill or task shall

utilize qualified and certified maintenance personnel as task trainers/qualifiers that shall assist in training and verifying proficiency of individual employees.
14.38.7.1. (Added) Employee Certification Criteria. All training and SSQ requirements for task certification shall be completed before an employee is certified. Proficiency at performing the task shall be demonstrated to a task trainer/qualifier or task certifying official. Equivalency cannot be granted for SSQ proficiency demonstration or safety training requirements. A proficiency demonstration is always required prior to certification. Supervisors' minimum certification criteria for employees are as follows:
14.38.7.1.1. (Added) Completion of all required training.
14.38.7.1.2. (Added) Completion of applicable SSQ qualification.
14.38.7.1.3. (Added) Performance of all parts of the task.
14.38.7.1.4. (Added) Knowledge of why and when the task is needed or accomplished.
14.38.7.1.5. (Added) Compliance with technical data and safety precautions.
14.38.7.1.6. (Added) Demonstration of proficiency.
14.38.8. (Added) Decertification Criteria. Any level of management can direct a decertification, but the certifying supervisor actually decertifies an individual. Decertification can be either administrative or workmanship related. Specific decertification criteria shall be established and documented at the local level as needed to ensure consistency among employees.
14.38.8.1. (Added) Administrative Decertification. Decertification for administrative reasons is based on such things as non-performance of the task for a prolonged period (As determined by the supervisor and the employee), personnel reassignments, medical conditions, workload changes, failure to pass SSQ re-qualification or overdue recurring requirements.
14.38.8.2. (Added) Workmanship Decertification. Decertification for workmanship reasons is based on such things as failure to comply with technical data and other applicable directives, valid customer complaints or feedback (both external and internal), PAC related mishaps, invalid certification of WCD, lack of proficiency, and as required by Chapter 8 and TO-00-35D-54, <i>USAF Deficiency Reporting and Investigating System</i> , Category I Deficiency Reports caused by workmanship.
14.38.9. (Added) Recertification Criteria. Recertification is accomplished once the conditions of decertification have been resolved or removed. The certifying supervisor determines the criteria to be used for recertification. As a minimum, a demonstration of proficiency of the task, or portion of the task, that resulted in the decertification shall be accomplished. The supervisor shall review all decertification to determine if the employee is required to re-attend formal training in order to meet the recertification criteria.

14.38.10. (Added) Annual Maintenance Employee Review. The supervisor shall perform an annual review with each assigned maintenance employee. The supervisor will brief the employee on the PAC program and certification responsibilities. The supervisor and maintenance employee shall signify that they are satisfied the documents are correct and valid using an electronic signature Personal Identification Number (PIN). The maintenance employee shall be given the opportunity to challenge the validity of any of the information in the PAC record. When an employee is moved from one supervisor to another, the gaining supervisor shall conduct a review within 30 days of assignment and annually thereafter.
14.38.11. (Added) Certifying WCDs. All WCDs shall be stamped and dated In accordance with Chapter 19 . Certification of tasks shall be performed by someone PAC certified in that specific task. Personnel not certified on the task being performed can accomplish the work if they are qualified to the extent necessary and are under the guidance of a PAC certified mechanic or technician.
(Added) NOTE: Supervisors accepting work by certifying WCDs for maintenance tasks shall meet the same training, qualification, and certification requirements as the PAC certified employee and shall require a PAC record.
14.38.11.1. (Added) Secondary Certification. Secondary certification (second set of eyes) shall be applied and is required for all critical tasks, with the following exceptions: where SSQ tasks, due to their very nature, do not allow for secondary certification, (i.e., some non-destructive testing, welding, and soldering tasks), or where it is impossible to inspect or witness the accomplishment of the task (e.g., engine run on single seat fighter aircraft, etc.) a single certification by a fully SSQ qualified and certified mechanic or technician is acceptable. Secondary certification shall be accomplished on the applicable WCD using one of the inspection codes identified in Chapter 19 . Secondary certification requires two PAC certified employees to inspect the work performed, stamp and date the WCD.
14.38.12. (Added) Non-Routine Work Certification Criteria. Non-routine work is workload that has not been in production for such a long period of time that PAC certified employees are no longer available. When non-routine work is reintroduced and a PAC certified employee is no longer available the supervisor will certify a journeyman technician to perform the task(s).
14.38.13. (Added) Multitask, Subtask and Team Task Certification. This shall be done by multiple annotations on the WCDs as specified in Chapter 19 and local directives.
14.38.14. (Added) PAC Documentation. TSS-PAC is the source data for PAC and shall be used for all official purposes such as audits, investigations, and inspections. The TSS-PAC PMO will impound the TSS-PAC records in case of mishaps, formal investigations or when directed by higher authority. Certification/decertification/recertification changes made in Section III of an employee's PAC record are not an official part of the record until the employee and supervisor verify them by PIN or signature. Administrative Decertification's due to non-performance or overdue training when the employee is not available for pinning may be accomplished but must be explained within TSS-PAC Sec IV. If depot work is performed where TSS-PAC is not available, use of printed copies is permitted. When PAC personnel go TDY to perform depot

<p>maintenance they are required to carry a copy of their PAC record with them. Depot field team requirements are outlined in AFMCI 21-120, <i>Organic Depot Field Teams</i>. Automated TSS-PAC contains the following six sections:</p>
<p>14.38.14.1. (Added) TSS-PAC Section I, Supervisor Identification. TSS-PAC documents the employee-to-supervisor assignment when an employee is assigned or reassigned.</p>
<p>14.38.14.2. (Added) TSS-PAC Section II, Job Knowledge Training. This section contains the employee training and qualification requirements.</p>
<p>14.38.14.3. (Added) TSS-PAC Section III, Tasks. This section identifies specific tasks on which the employee can be trained, qualified or certified.</p>
<p>14.38.14.3.1. (Added) Task Title. The task title shall be related to the WCDs as much as possible, and as a minimum, shall have a noun descriptor (i.e., component or system name) and performance statement (e.g., repair, install, set-up, test, operate, etc.).</p>
<p>14.38.14.3.2. (Added) OJT Start Date. The date that is entered shall be the actual date the supervisor assigns employees to begin training on the task.</p>
<p>14.38.14.3.3. (Added) OJT Completion Date. The date that is entered shall be the actual date the employee completes the OJT and is proficient in the task. For qualification tasks, the OJT completion date shall verify performance demonstration</p>
<p>14.38.14.3.4. (Added) Certification Date. The date that is entered shall be the actual date the employee successfully demonstrates task proficiency to the supervisor, (or the date the supervisor grants certification based on the verification of demonstrated proficiency by the task trainer/ qualifier).</p>
<p>14.38.14.3.5. (Added) Recertification Date. The date that is entered shall be the actual date that the employee successfully demonstrates task proficiency to the supervisor, (or the date the supervisor grants certification based on the verification of proficiency by the task trainer/qualifier).</p>
<p>14.38.14.3.6. (Added) Decertification Date. The date that is entered shall be the actual date that the supervisor decertifies the employee, or the date when TSS-PAC decertifies the employee for overdue training or qualifications.</p>
<p>14.38.14.4. (Added) TSS-PAC Section IV, Training Summary. This section lists explanations and additional clarifying information on PAC documentation.</p>
<p>14.38.14.5. (Added) TSS-PAC Section V, Decertification Data. This section lists the task, reason, and dates when an employee is decertified. It can also list what training is needed to recertify the employee. Entries in this section shall be removed after the recertification action and retained in history. After a period of one year from the date of decertification, the information in this section and its history will be deleted even if the person has not been re-</p>

certified. History on these actions shall only be accessible and viewable by system administrators. These history records shall only be used to provide an audit trail for mishaps.
14.38.14.6. (Added) TSS-PAC Section VI, Annual Certification Review. This section documents the annual review of the employee's TSS-PAC record by the employee and supervisor.
14.38.15. (Added) Military Personnel. Military personnel performing depot maintenance are required to comply with all applicable depot maintenance directives. SSQ and RTR requirements shall apply to these personnel. Current AF Form 623, <i>Individual Training Record Folder</i> , shall be maintained in accordance with AFI 36-2201, Vol 3, <i>Air Force Training Program, On The Job Training Administration</i> . This record can be used in place of TSS-PAC documentation if all requirements of this supplement are met. Applicable records shall accompany the personnel when they are deployed to perform depot maintenance.
14.38.15.1. (Added) AF Form 623, <i>Individual Training Record Folder</i> , or the AF Form 797, <i>Job Qualification Standard Continuation/Command JQS</i> , must document the service member is qualified/certified to perform the task if certifications of depot WCDs are required.
14.38.15.2. (Added) WCD certifications shall be accomplished using maintenance stamps authorized in Chapter 19 .
14.38.15.3. (Added) The SCR shall satisfy depot SSQ certification requirements. The SCR authorizes military personnel to certify (stamp) depot WCDs when performing SSQ tasks. Tasks shall be added to the SCR or this supplement and local publication SSQ requirements shall be followed if SSQs are not listed on the SCR.
14.38.15.4. (Added) Applicable RTR requirements listed in Table A14.2 . of this supplement and Attachment 4 of AFI 36-2232, <i>Maintenance Training</i> , AFMC Sup 1 shall apply to these personnel. Command Standard Courses shall be used if developed.
14.39. (Added) Special Skills Qualification (SSQ). SSQs are skills so specialized that they require extensive technical knowledge and proficiency. Most of these skills are governed by military specifications or higher level regulatory guidance, are safety related, or have a significant impact on cost. Qualification and re-qualification requirements for SSQs established by this supplement and by local Wings are mandatory for PAC certification. For SSQ Guide and Worksheet, reference Table A14.3 . Further maintenance training information can be found in AFI 36-2232, AFMC Sup 1, <i>Maintenance Training</i> .
14.39.1. (Added) SSQ Applicability. Mandatory SSQ requirements apply to all AFMC organizations performing depot maintenance. Special skills require a periodic re-qualification. Individuals who fail the re-qualification or cannot be re-qualified within the designated time frame shall be disqualified for that SSQ skill and decertified for all PAC tasks related to the SSQ.
14.39.2. (Added) SSQ Requirements. Completion of specialized formal training, demonstration

of proficiency, periodic re-qualification, and completion of a written test (As applicable) are required for SSQ skills. Traditional OJT can be used to augment formal training as needed. Applicable AFI, AFMCI, AFOSH, and other regulatory requirements shall be included in SSQ requirements.

(Added) NOTE: For new workloads, it may not be possible to satisfy all requirements (for example, experience requirements on the MDS) to start work. In these cases the responsible supervisor shall select the best qualified journeyman technician; this technician will be appointed as the SSQ Official per this supplement.

14.39.3. **(Added)** Request for SSQ Waivers. Request for waivers to the initial qualification requirement shall be initiated in writing by the Group PAC Manager and submitted to the Wing PAC Manager for routing to MXW for action. If approved by the MXW/CC/DV, it shall be submitted to HQ AFMC/A4D for action. The Wing PAC Program Manager shall inform the Group PAC Program Manager of any waivers granted. The Wing PAC Program Manager shall maintain a copy on file.

14.39.3.1. **(Added)** Request for Temporary SSQ extensions. Request for extensions to re-qualification requirements can be approved by the MXW/CC/DV. Extensions shall be initiated in writing by the Group PAC Manager and submitted to the Wing PAC Manager for routing to MXW for action. Wing PAC Managers shall inform the Group PAC Manager of any extension granted. The Wing PAC Managers shall maintain a copy on file. Extensions shall not exceed 90 days unless a waiver is obtained from AFMC/A4D.

14.39.4. **(Added)** Local SSQ. Local SSQ requirements shall be established if unique Wing requirements exist.

14.39.4.1. **(Added)** All local SSQs shall be administered by the Wing PAC Program Manager and approved by the Wing CC/DV.

14.39.4.2. **(Added)** Locally designated SSQs shall meet all requirements of this supplement.

14.39.4.3. **(Added)** All locally designated SSQs shall be forwarded to HQ AFMC/A4D with copies to all AFMC Wing PAC Program Managers.

14.39.4.4. **(Added)** HQ AFMC/A4D shall ensure that locally designated SSQs are standardized for common tasks.

14.39.5. **(Added)** SSQ Re-qualification. Re-qualification shall be accomplished in accordance with each independent SSQ requirement established in this supplement and in local publications.

14.39.6. **(Added)** SSQ Disqualification. Disqualification shall be accomplished in accordance with each independent SSQ disqualification requirement established in this supplement and in local publications. SSQ disqualification shall result in immediate decertification on SSQ-related PAC tasks.

14.39.7. (Added) Mandatory SSQs. The special skills listed in paragraph 14.13. and subparagraphs are mandatory requirements as they apply to each Wing. The references listed for the mandatory skills are not intended to be all-inclusive, and shall be used with other directives and technical publications that apply to the special skill to develop qualification requirements. It is essential that all AFOSH and other applicable safety requirements are included in the formal training. New or revised Command level SSQ requirements shall be proposed by HQ AFMC/A4D and approved by the AFMC MA Executive Steering Group (ESG) before implementation, unless directed by higher authority.
(Added) NOTE: AMARG shall comply with the following SSQ requirements where possible. When unique aircraft requirements make it impractical for full compliance, AMARG shall document a qualification program that provides the best qualification possible. These procedures shall be approved by 309 MXW/CC/DV.
14.39.8. (Added) SSQ Responsibilities:
14.39.8.1. (Added) Lead Maintenance Wing for AFMC Special Skills Qualifications (SSQs). Lead Maintenance Wings for command SSQs are appointed by HQ AFMC/A4D. The SSQ Lead Maintenance Wing shall:
14.39.8.1.1. (Added) Arrange for subject matter experts to provide technical guidance to Maintenance Wings, HQ AFMC, and other organizations on issues related to the subject area of assigned SSQ.
14.39.8.1.2. (Added) Serve as liaison between Maintenance Wings, HQ AFMC and other organizations on issues related to assigned SSQ.
14.39.8.1.3. (Added) Ensure that Maintenance Wings are involved in decisions related to the assigned SSQ.
14.39.8.1.4. (Added) Assigned SSQs will be updated as needed and reviewed at least triennially to ensure the requirements identified in this supplement are adequate and current to support it; report changes that require immediate action to HQ AFMC/A4D.
14.39.8.2. (Added) SSQ Qualification Official. The SSQ Qualification Officials shall be SMEs in the skills they support. They shall possess the knowledge, skills and abilities to perform this function. SSQ Officials shall be appointed for each command and locally designated at each Wing. These officials should avoid qualifying employees they supervise. If a local expert is not available to act as the SSQ official, an outside source may be designated. The order of selection is: another ALC or AFMC unit, another Air Force unit, another DoD source, academia, or other commercial/private source. If none of these sources are available, the responsible system engineers or other technical experts shall be used to develop qualification requirements, train, and qualify the first SSQ Officials. The SSQ Qualification Official shall;
14.39.8.2.1. (Added) Be SSQ qualified in the skill supported or possess the necessary

credentials required by the SSQ, (i.e., degree, professional/industrial certification).
14.39.8.2.2. (Added) Be appointed in writing by the MXW/CC/DV or production Group supported.
14.39.8.2.3. (Added) Complete the <i>AFMC SSQ Qualifier Course</i> .
(Added) NOTE: If the designated SSQ Qualification Official is from an outside source, his/her education or certification shall be documented and current as specified by the governing authority (e.g., recognized professional organization, American National Standards Institute, etc.).
14.39.8.2.4. (Added) Notify the Group PAC Program Manager when changes to SSQ requirements are necessary.
14.39.8.2.5. (Added) Prepare and use the appropriate SSQ proficiency worksheet for each SSQ supported.
14.39.8.2.5.1. (Added) Complete all steps of the SSQ proficiency worksheet to include completion dates for all prerequisite training.
14.39.8.2.6. (Added) Participate as an SSQ SME in the development and review of SSQ Guides, SSQ worksheet, and formal training supporting the SSQ.
14.39.8.2.7. (Added) Witness and evaluate the performance of the skill using the appropriate SSQ proficiency worksheet.
14.39.8.2.8. (Added) Inform the supervisor in writing (SSQ worksheet documentation or other means deemed appropriate) that the employee is qualified or the employee failed their SSQ or written test.
14.39.8.2.8.1. (Added) TSS may be used to notify supervisors in writing if the employee passed or failed.
14.39.8.2.9. (Added) Provide completed copies of the SSQ worksheets to the applicable Group PAC Program Manager.
14.39.8.3. (Added) Aircraft Engine Run-up.
14.39.8.3.1. (Added) Regulatory Documents. Compliance with AFI 11-218, <i>Aircraft Operations and Movement on the Ground</i> , as supplemented, and applicable AFOSH standards, weapons system TOs, job guides, and other directives.
14.39.8.3.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.

14.39.8.3.3. (Added) Application. Applies to all personnel who start, run-up, operate or test engines installed on aircraft at any power level, including co-pilot position.
14.39.8.3.4. (Added) Qualification. The following are minimum initial qualification requirements that shall be augmented locally as necessary:
14.39.8.3.4.1. (Added) Completion of formal training, as it relates to specific MDS engine run-up procedures, which shall include the following:
14.39.8.3.4.1.1. (Added) Aircraft systems familiarization, as it applies to engine run.
14.39.8.3.4.1.2. (Added) Cockpit/flight deck familiarization (to include instrument, switches, circuit breaker functions, and locations) for all aircraft equipped with operational egress systems.
14.39.8.3.4.1.3. (Added) MDS specific emergency ground escape procedures.
14.39.8.3.4.1.4. (Added) Engine run procedures.
14.39.8.3.4.1.5. (Added) Emergency procedures (including system brake operation).
14.39.8.3.4.1.6. (Added) Abnormal operations.
14.39.8.3.4.1.7. (Added) Aircraft marshaling.
14.39.8.3.4.1.8. (Added) Auxiliary power or starting unit procedures as applicable to each MDS.
14.39.8.3.5. (Added) Completion of initial simulator (or cockpit procedures trainer) session. When simulator (or cockpit trainer), or other structured training is not available for an MDS, alternative methods for engine run training shall be developed by the Wing and approved by HQ AFMC/A4D.
14.39.8.3.6. (Added) Completion of a written test consisting of two parts:
14.39.8.3.6.1. (Added) BOLDFACE/Emergency procedures test, 100 percent correct passing score (committed to memory).
14.39.8.3.6.2. (Added) A general knowledge written test, 85 percent correct minimum passing score, corrected to 100 percent.
14.39.8.3.7. (Added) Proficiency demonstration to an SSQ Qualification Official.
14.39.8.3.7.1. (Added) Re-qualification. Re-qualification is required every 12 months and shall consist of, as a minimum:

14.39.8.3.7.2. (Added) Completion of one simulator (or cockpit procedures trainer/live aircraft) session. When the individual is qualified for several similar aircraft, rotate simulators each year (if possible) to vary experiences.
14.39.8.3.7.3. (Added) Demonstration of proficiency to an SSQ Qualification Official for each similar aircraft/engine configuration.
14.39.8.3.7.4. (Added) Completion of a written test (same criteria as initial qualification).
(Added) NOTE: If simulator time is difficult to schedule for annual re-qualification, it may be performed, at Wing discretion, in a cockpit/flight deck demonstration in lieu of a simulator session.
14.39.8.3.8. (Added) Currency. Currency is maintained if an engine run has been performed within 90 days for each MDS. If 90 days to 180 days have passed without performing an engine run, a proficiency demonstration to an SSQ Qualification Official is required. If 180 days has passed without performing an engine run an annual re-qualification is required.
(Added) NOTE: If low workload volume makes it impossible to meet this requirement (90/180 day currency) the responsible supervisor will select a MDS SSQ qualified and certified technician to perform the engine run.
14.39.8.3.9. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, or failure to perform required procedures in accordance with the applicable technical directives can be grounds for immediate disqualification. Failure to maintain qualification, failure to comply with BOLDFACE items (emergency procedures) and/or failure to maintain the required level of proficiency shall be grounds for disqualification. Re-qualification is granted when the deficiency is corrected and all qualifications have been met as described above.
14.39.8.3.10. (Added) Special Requirements. When possible, flight test personnel or other rated personnel, shall qualify (initial and annual re-qualification) all SSQ Qualification Officials.
14.39.8.4. (Added) Engine Test Cell Operator.
14.39.8.4.1. (Added) Regulatory Documents. Applicable engine technical data /job guides, test cell operation instructional manual and applicable AFOSH standards.
14.39.8.4.2. (Added) Lead Maintenance Wing. OC-ALC, Tinker AFB, Oklahoma.
14.39.8.4.3. (Added) Application. Applies to all personnel who operate aircraft engines and small gas turbines in test facilities.
14.39.8.4.4. (Added) Qualification. The following are minimum initial qualification requirements that shall be locally augmented as necessary:

14.39.8.4.4.1. (Added) Completion of formal training, as it relates to aircraft engines and small gas turbines test procedures.
14.39.8.4.4.2. (Added) Completion of a written test consisting of two parts:
14.39.8.4.4.2.1. (Added) BOLDFACE/Emergency procedures test, 100 percent correct passing score (committed to memory).
14.39.8.4.4.2.2. (Added) A written test on the specific type-model engine, 85 percent correct minimum passing score, corrected to 100 percent.
14.39.8.4.4.3. (Added) Demonstration of proficiency to an SSQ Qualification Official. At a minimum, this shall include demonstrated knowledge of the test cell fire extinguishing system and the ability to perform normal engine acceptance test.
14.39.8.4.4.4. (Added) Re-qualification. Re-qualification is required every 12 months, and shall include completion of a written test (same criteria as initial qualification), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.4.4.5. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.5. (Added) Aircraft Towing.
14.39.8.5.1. (Added) Regulatory Documents. AFI 11-218, <i>Improving Air and Space Equipment Reliability and Maintainability</i> , as supplemented and applicable to AFOSH standards, weapons system technical orders, job guides, and other directives.
14.39.8.5.2. (Added) Lead Maintenance Wing. OC-ALC, Tinker AFB, Oklahoma.
14.39.8.5.3. (Added) Application. Applies to all personnel occupying a cockpit position for aircraft towing, and operating a vehicle actively towing an aircraft or acting as a tow team chief. Wing walkers, tail walkers, and all other support personnel performing assigned duties during towing operations do not need SSQ. These individuals shall be trained and qualified to the extent necessary to perform the function as determined locally.
14.39.8.5.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and a demonstration of proficiency to an SSQ Qualification Official.
14.39.8.5.5. (Added) Re-qualification. Re-qualification is required every 12 months and shall

include demonstration of proficiency to an SSQ Qualification Official.
14.39.8.5.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.5.7. (Added) Special Comments. All personnel occupying a cockpit position during the towing operation shall have completed the applicable emergency ground escape course. If an operational egress system is installed, the applicable egress familiarization course shall be completed and current.
14.39.8.6. (Added) Airframe Jacking and Leveling.
14.39.8.6.1. (Added) Regulatory Documents. Applicable weapons system TOs, job guides, AFOSH standards and directives.
14.39.8.6.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
14.39.8.6.3. (Added) Application. Applies to all personnel performing the following functions: jacking chief, hydraulic manifold operator, and the leveling member. All other support personnel involved in jacking operations do not need SSQ. These individuals need only be trained to the extent necessary to accomplish their task.
14.39.8.6.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.6.5. (Added) Re-qualification. Re-qualification is required every 24 months and shall include demonstration of proficiency to an SSQ Qualification Official.
14.39.8.6.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.7. (Added) Explosive Devices.
14.39.8.7.1. (Added) Regulatory Documents. AFMAN 91-201, <i>Explosive Safety Standards</i> , AFI 91-202, <i>The US Air Force Mishap Prevention Program</i> , applicable AFOSH standards, weapons system TOs, job guides, and other directives.
14.39.8.7.2. (Added) Lead Maintenance Wing. WR-ALC, Robins AFB, Georgia.

14.39.8.7.3. (Added) Application. Applies to all personnel who remove and install explosive devices.
14.39.8.7.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.7.5. (Added) Re-qualification. Re-qualification is required every 12 months and shall include demonstration of proficiency to an SSQ Qualification Official.
14.39.8.7.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.8. (Added) Refuel/Defuel Operations.
14.39.8.8.1. (Added) Regulatory Documents. TO 00-25-172, <i>Ground Service of Aircraft and Static Grounding/Bonding</i> , applicable AFOSH standards, weapons system TOs, job guides, and other directives.
14.39.8.8.2. (Added) Lead Maintenance Wing. WR-ALC, Robins AFB, Georgia.
14.39.8.8.3. (Added) Application. Applies to all personnel performing refueling or de-fueling of any aerospace vehicle.
14.39.8.8.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.8.5. (Added) Re-qualification. Re-qualification is required every 12 months. Consists of completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.8.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency to ensure the safe transfer of fuel, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.8.7. (Added) Special Comments. Due to the criticality of transferring fuel, only those directly involved with the process shall be allowed within the area of the transfer. Periodic monitoring of the actual process in progress is required to ensure adherence to all applicable

directives and to verify that the high state of proficiency required in this process is maintained. Training shall include ESD information specific to fueling operations.
(Added) NOTE: All personnel occupying a cockpit position during the transfer of fuel shall have completed the applicable emergency ground escape course. The applicable cockpit egress familiarization course must be complete and current if an operational egress system is installed.
14.39.8.9. (Added) Aircraft Cabin/Cockpit/Fuselage Pressurization.
14.39.8.9.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
14.39.8.9.3. (Added) Application. Applies to all personnel who perform aircraft cabin/cockpit/fuselage pressurization checks or functional tests requiring aircraft pressurization using either aircraft or external sources of pressurization. Applies to all tasks directly related to the pressurization check/test included in applicable TO, job guide or work control document.
14.39.8.9.4. (Added) Qualification. Qualification is granted after successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of the ability to perform the check/test in accordance with all the requirements of the technical data to an SSQ Qualification Official.
14.39.8.9.5. (Added) Re-qualification. Re-qualification is required every 12 months. Employees shall demonstrate the ability to perform the check/test in accordance with all the requirements of the technical data to an SSQ Qualification Official.
14.39.8.9.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, or failure to perform the pressurization check/test procedure in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.9.7. (Added) Special Comments. Because of the wide variations in MDS, qualification criteria will meet specific weapon systems needs.
(Added) NOTE: All personnel occupying a cockpit/crew cabin position during any portion of the aircraft cabin/cockpit pressurization process shall have completed the applicable emergency ground escape course. The applicable cockpit egress familiarization course must be complete and current if an operational egress system is installed.
14.39.8.10. (Added) Aircraft Canopy Rigging.
14.39.8.10.1. (Added) Regulatory Documents. The applicable weapons system TOs, job guides, applicable AFOSH standards, and directives.
14.39.8.10.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.

14.39.8.10.3. (Added) Application. Applies to all personnel who perform rigging operations on aircraft canopies. In some cases the canopy rigging task may be part of the egress qualification for that MDS. If this is the case the egress SSQ is all that is required.
14.39.8.10.4. (Added) Qualification. Qualification is granted upon completion of required training and a demonstration of proficiency in the canopy rigging operation to an SSQ Qualification Official.
14.39.8.10.5. (Added) Re-qualification. Re-qualification is required every 24 months and shall include a demonstration of proficiency to an SSQ Qualification Official.
14.39.8.10.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.11. (Added) Flight Control Rigging.
14.39.8.11.1. (Added) Regulatory Documents. Applicable weapons system TOs, job guides, applicable AFOSH standards, and directives.
14.39.8.11.2. (Added) Lead Maintenance Wing. WR-ALC, Robins AFB, Georgia.
14.39.8.11.3. (Added) Application. Applies to all personnel who perform aircraft flight control rigging (flight control rigging includes all tasks associated with the operational checkout and adjustment of mechanical, hydraulic and/or electrical systems which control aircraft flight direction and attitude). Personnel trained in flight control rigging may be specialized in either the mechanical, hydraulic or electrical skill of rigging. Personnel assisting in the rigging process in a support role may not require SSQ.
14.39.8.11.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.11.5. (Added) Re-qualification. Re-qualification is required every 12 months and shall include completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.11.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.

14.39.8.11.7. (Added) Special Comments. All personnel occupying a cockpit/crew cabin position during any portion of the flight control rigging process shall have completed the applicable emergency ground escape course. The applicable cockpit egress familiarization course must be complete and current if an operational egress system is installed.
14.39.8.12. (Added) Aircraft Egress Systems.
14.39.8.12.1. (Added) Regulatory Documents. AFI-21-101, <i>Aircraft and Equipment Maintenance Management</i> , AFMAN 91-201, <i>Explosives Safety Standards</i> , AFI 91-202, <i>The US Air Force Mishap Prevention Program</i> ; applicable AFOSH standards, weapons system TOs, job guides, and other directives.
14.39.8.12.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
14.39.8.12.3. (Added) Application. Applies to all personnel who remove, repair, install and inspect egress systems. An egress technician is a civilian series WG - 6652, <i>Aircraft Ordnance Systems Mechanic</i> , or the military equivalent (AFSC 2A6X3) who meets the requirements of this supplement. Other personnel who perform or assist in egress tasks (including series WG - 6652) when it is not their primary duties are egress augmentees. The augmentees shall meet the requirements of this supplement for the tasks performed.
14.39.8.12.4. (Added) Qualification. As a minimum, the following are initial qualification requirements for egress technicians and augmentees:
14.39.8.12.4.1. (Added) Completion of an aircrew egress systems apprentice course or a waiver based upon equivalent training or experience as specified in AFI 21-101.
14.39.8.12.4.2. (Added) Completion of an initial weapons safety course as specified in AFI 91-202.
14.39.8.12.4.3. (Added) Completion of an AETC journeyman/five level egress course (preferred) or a comparable AETC approved egress course for the specific MDS aircraft.
14.39.8.12.4.4. (Added) Completion of a written test with a score of 100 percent. Failure to attain 100 percent correct shall require further training and retesting.
14.39.8.12.4.5. (Added) Demonstration of acquired knowledge and skill proficiency to an SSQ Qualification Official.
14.39.8.12.5. (Added) Re-qualification. All egress technicians and augmentees shall be re-qualified every 18 months. Re-qualification shall consist of:
14.39.8.12.5.2. (Added) Completion of a written test (same criteria as initial qualification).
14.39.8.12.5.3. (Added) Demonstration of proficiency to an SSQ Qualification Official.

14.39.8.12.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives can be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification. Re-qualification is granted when the deficiency is corrected and all qualifications have been met as described above.
14.39.8.12.7. (Added) Special Requirements.
14.39.8.12.7.1. (Added) Demand Response Team. All personnel shall use the Demand Response Team when performing an egress task that requires the removal or installation of explosive components, and during egress final inspections as directed by technical orders. AFI 21-101 provides guidance that shall be followed. All personnel performing egress tasks shall be SSQ qualified and certified. Only egress certified technicians shall certify egress tasks, to include secondary certification and sign-off of aircraft status forms. Non-qualified or certified personnel may assist if they are in a training status or when performing ancillary duties in support of, and under the direct supervision of fully qualified and certified egress personnel.
14.39.8.12.7.2. (Added) Life Support Task. When parachutes and survival kits are integral parts of the ejection seat, either egress personnel or life support personnel (AFSC 1T1X1 or series WG-4818, <i>Aircraft Flight Equipment Repairer</i>) may install and remove them provided they meet the requirements specified in AFI 21-101.
14.39.8.12.7.3. (Added) (AMARG Only). There are normally no requirements for specific egress training on an aircraft that is being maintained in storage or that is being processed into reclamation. For aircraft being processed into storage, egress personnel shall be qualified and certified to perform all egress tasks in support of the storage function. Training for Process-In aircraft egress systems tasks of SAFE/DISARM and CAD/PAD Removals (CADRE) shall be managed as critical tasks and training shall include the use of locally developed standard SOJT training guides and worksheets. SAFE/DISARM guides and worksheet shall incorporate the use of MDS specific Explosive Operating Instructions (EOI's) approved by AMARG/SE, AMARG/CC-QA and 355th Wing Weapons Safety. This Process-In training program shall provide for the development and delivery of training using the most qualified SMEs. The individual may come from AMARG on aircraft systems previously trained or worked. When no local SME exists, training shall be provided by the most qualified source (i.e. qualified egress system mechanic from the aircraft losing organization). The AMARG designated egress SOJT trainer or qualifier shall only qualify individuals who can perform the function safely, and all elements of the respective SOJT training guide and worksheet have been accomplished.
14.39.8.12.8. (Added) Aircraft Cockpit Egress Familiarization and Aircraft Emergency Ground Escape. Personnel who are not SSQ qualified in egress but who access cockpits (e.g., flight deck, cabin, etc.) with operational egress systems installed shall complete the applicable aircraft emergency ground escape and complete/be current in the applicable cockpit egress familiarization course.

14.39.8.13. (Added) Fuel Cell Repair.
14.39.8.13.1. (Added) Regulatory Documents. TO 1-1-3, <i>Inspection and Repair of Aircraft Integral Tanks and Fuel Cells</i> , AFOSH Standards, applicable weapon systems TOs, job guides, and directives.
14.39.8.13.2. (Added) Lead Maintenance Wing. WR-ALC, Robins AFB, Georgia.
14.39.8.13.3. (Added) Application. Applies to all personnel who perform final inspection and close-out, leak detection and repair, and pressure check/test of integral tanks or fuel cells (to include bladders). Personnel who perform ancillary duties in support of fuel cell/tank work may not need SSQ, but shall be trained to the extent necessary to safely perform the tasks.
14.39.8.13.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and a demonstration of proficiency to an SSQ Qualification Official.
14.39.8.13.5. (Added) Re-qualification. Re-qualification is required every 12 months and shall include completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.13.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.13.7. (Added) Special Comments. If the integral, auxiliary or external tank is removed from the aircraft the SSQ requirement still applies. Training shall include ESD information specific to fuel cell repair operations.
14.39.8.14. (Added) Fiberglass Radome Repair.
14.39.8.14.1. (Added) Regulatory Documents. TO 1-1-24, <i>Maintenance Repair and Electrical Requirements for Fiberglass Airborne Radomes</i> , applicable AFOSH standards, weapons system TOs, job guides, and other directives.
14.39.8.14.2. (Added) Lead Maintenance Wing. WR-ALC, Robins AFB, Georgia.
14.39.8.14.3. (Added) Application. Applies to all personnel who perform repairs to any airborne radome constructed of reinforced fiber and resin impregnated materials.
14.39.8.14.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and a demonstration of proficiency Consisting of two parts:

14.39.8.14.4.1. (Added) Repairing simulated damage to fiberglass panels of the type of construction normally repaired, with the structural integrity verified by destructive testing.
14.39.8.14.4.2. (Added) Demonstration of proficiency to an SSQ Qualification Official on work normally performed.
14.39.8.14.5. (Added) Re-qualification. Re-qualification is required every 24 months and shall include a demonstration of proficiency to an SSQ Qualification Official using the same criteria as the initial qualification.
14.39.8.14.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.15. (Added) Parachute Repairer and Packer.
14.39.9.13.1. (Added) Regulatory Documents. Regulatory documents consist of TO series 14D1, 14D2, 14D3, 14S1, and other applicable directives.
14.39.8.15.2. (Added) Lead Maintenance Wing. WR-ALC, Robins AFB, Georgia.
14.39.8.15.3. (Added) Application. Applies to all personnel who inspect, repair, or pack parachutes.
14.39.8.15.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and a demonstration of proficiency to an SSQ Qualification Official.
14.39.8.15.5. (Added) Re-qualification. Re-qualification is required every 12 months and shall include completion of a written test, 85 percent correct minimum passing score, corrected to 100 percent, and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.15.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives can be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.16. (Added) Non-Destructive Inspection (NDI).
14.39.8.16.1. (Added) Regulatory Documents. NAS 410, NAS Certification & Qualification of Nondestructive Test Personnel and AFI 21-105, <i>Air and Space Equipment Structural</i>

Maintenance, AFOSH 91-110, <i>Nondestructive Inspection and Oil Analysis Program</i> , and other directives.
14.39.8.16.2. (Added) Lead Maintenance Wing. OC-ALC, Tinker AFB, Oklahoma.
14.39.8.16.3. (Added) Application. Applies to all personnel who perform NDI on aircraft, missiles, and aerospace components.
14.39.8.16.4. (Added) Qualification. The SSQ Qualification Official shall be a Level 3 in the applicable method. Qualification is granted after successful completion of all requirements of NAS 410 for applicable NDI method and eye exams shall be administered by the base medical facility or occupational medicine facility on an annual basis.
14.39.8.16.5. (Added) Re-qualification. Vision requirements are contained in NAS 410. Level 1 and 2 shall be re-qualified by general, specific, and practical test at intervals not to exceed 36 months. Level 3 shall be re-qualified at intervals not to exceed 60 months.
14.39.8.16.6. (Added) Currency. Comply with currency requirements of NAS 410.
14.39.8.16.7. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required proficiency, failure to meet vision requirements, or failure to perform the required procedures in accordance with the applicable technical directives can be grounds for immediate disqualification. Failure to pass re-qualification requirements shall also constitute grounds for disqualification. Failure to pass a written test at a higher qualification level is not grounds for disqualification at the lower level, and the employee may continue to perform lower level duties. Records. AFMC Form 74, <i>Nondestructive Inspection Personnel Qualification and Certification Record</i> , shall be maintained by the SSQ Qualification Official.
14.39.8.17. (Added) Soldering.
14.39.8.17.1. (Added) Regulatory Documents. TO 00-25-234, <i>General Shop Practice Requirements for the Repair, Maintenance, and Test of Electrical Equipment</i> , TO 00-25-259, <i>Standard Maintenance Practices Miniature/Micro-miniature (2M) Electronic Assembly Repair</i> , applicable AFOSH standards, weapons system TOs, job guides, and other directives.
14.39.8.17.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
14.39.8.17.3. (Added) Application. Applies to personnel who perform hand-held soldering (i.e. not hot air) on aerospace electrical and electronic equipment. This includes all depot maintenance personnel engaged in repair, maintenance, or test of aerospace electrical/electronic equipment. Personnel who perform hand-held soldering on test equipment and other aerospace equipment that directly support depot production are also included.
14.39.8.17.4. (Added) Qualification. The following are minimum initial requirements for soldering technicians, instructors and SSQ qualification officials:

14.39.8.17.4.1. (Added) Technicians. Successful completion of AFMC soldering technician course applicable to specific soldering tasks supported. Successful completion of written test(s), with a passing score of 85 percent, corrected to 100 percent, applicable to the soldering tasks supported. Demonstration of proficiency to an SSQ Qualification Official.
14.39.8.17.4.2. (Added) Instructors and Qualification Officials. Successful completion of the <i>AFMC Soldering Instructor Qualification Course</i> applicable to specific soldering discipline they intend to instruct and/or serve as SSQ qualifiers. Successful completion of written test (with a passing score of 85 percent, corrected to 100 percent) applicable to specific soldering discipline they intend to instruct and/or serve as SSQ qualifiers. Demonstration of proficiency to the course instructor.
14.39.8.17.5. (Added) Re-qualification. The following are minimum re-qualification requirements for soldering technicians, instructors and qualification officials:
14.39.8.17.5.1. (Added) Technicians. Re-qualification intervals are established based on criticality of the work performed but shall not exceed 24 months. If the work is critical in nature or impacts safety of flight, the re-qualification shall not exceed 12 months. Requires successful completion of a demonstration of proficiency to an SSQ Qualification Official.
14.39.8.17.5.2. (Added) Instructors and Qualification Officials. Re-qualification shall not exceed 24 months and shall include completion of the <i>AFMC Soldering Instructor Re-qualification Course</i> applicable to the specific soldering discipline(s) which they instruct and/or serve as SSQ qualifiers; successful completion of written test(s) with the same criteria as initial qualification, (Applicable to specific soldering disciplines which they instruct and/or serve as SSQ qualifiers); and demonstration(s) of proficiency to the course instructor.
14.39.8.17.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Additionally, qualification can be revoked if inspection records or other evidence indicates poor workmanship. Re-qualification is granted when the deficiency is corrected and all qualification requirements, as described above, have been met.
14.39.8.18. (Added) Liquid and Gaseous Oxygen Handling and Equipment Maintenance.
14.39.8.18.1. (Added) Regulatory Documents. TO 42B6-1-1, <i>Quality Control Aviators Breathing Oxygen and Aviators Gaseous Breathing Oxygen</i> , 15X and 35 series TOs, applicable AFOSH standards, weapons system technical orders, job guides, and other directives.
14.39.8.18.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
14.39.8.18.3. (Added) Application. Applies to all personnel who repair, service, store, transfer,

purge, bleed, vacuum, pressure check or otherwise handle or use liquid or gaseous oxygen in maintenance tasks. It also applies to personnel who perform maintenance on liquid and gaseous oxygen equipment. Duties, such as removal and installation of lines, pressure relief valves, regulators and converters removed from the aircraft during the depot maintenance process, prior to pressure check and purging are considered to be ancillary duties and do not require SSQ.
14.39.8.18.4. (Added) Qualification. Qualification is granted after successful completion of the required training and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.18.5. (Added) Re-qualification. Re-qualification is required every 24 months and shall include a demonstration of proficiency to an SSQ Qualification Official.
14.39.8.18.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives can be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification. Retraining and successful demonstration of proficiency to an SSQ Qualification Official shall be required prior to regaining qualification.
14.39.8.19. (Added) Selective Brush Plating.
14.39.8.19.1. (Added) Regulatory Documents. Applicable weapons systems, general TOs, and other applicable technical and safety directives.
14.39.8.19.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
14.39.8.19.3. (Added) Application. Applies to all personnel who perform the process of selective brush electrode deposition of various metals and alloys on other metals and alloys.
14.39.8.19.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and a demonstration of proficiency to an SSQ Qualification Official.
14.39.8.19.5. (Added) Re-qualification. Re-qualification is required every 36 months and shall include demonstration of proficiency to an SSQ Qualification Official.
14.39.8.19.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.20. (Added) Temper Etch.
14.39.8.20.1. (Added) Regulatory Documents. Regulatory documents consist of MIL-Std-867C, <i>Temper Etch Inspection</i> ; applicable AFOSH standards, technical orders, and other

directives.
14.39.8.20.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
14.39.8.20.3. (Added) Application. Applies to all personnel who perform temper etching and subsequent temper etching inspection on applicable aircraft and missile structural and propulsion system components.
14.39.8.20.4. (Added) Qualification. Qualification is granted upon successful completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and a demonstration of proficiency to an SSQ Qualification Official.
14.39.8.20.5. (Added) Re-qualification. Re-qualification is required every 12 months and shall include completion of a written test, 85 percent correct minimum passing score, corrected to 100 percent, and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.20.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives can be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.21. (Added) Brazing.
14.39.8.21.1. (Added) Regulatory Documents. American Welding Society, (AWS) specification B2.2, <i>Standard for Brazing Procedures and Performance Qualification</i> , T.O. 00-25-252, <i>Intermediate Maintenance and Depot Level Maintenance Instructions – Aeronautical Equipment Welding</i> , MIL-STD-B-12673, <i>Brazing Oxyacetylene of Build-up Metal Structures</i> , applicable AFOSH standards, weapons system TOs, job guides, and other directives.
14.39.8.21.2. (Added) Lead Maintenance Wing. OC-ALC, Tinker AFB, Oklahoma.
14.39.8.21.3. (Added) Application. Applies to personnel who perform oxyacetylene, induction and resistance brazing on aircraft, aircraft engines, propulsion systems components, and aerospace components.
14.39.8.21.4. (Added) Qualification. Qualification is granted upon successful completion of required training and demonstration of proficiency of the employee's ability to braze a joint on a representative production part to an SSQ Qualification Official.
14.39.8.21.5. (Added) Re-qualification. Re-qualification is required every 36 months and shall include demonstration of proficiency to an SSQ Qualification Official.
14.39.8.21.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of

proficiency, failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.
14.39.8.22. (Added) Welding.
14.39.8.22.1. (Added) Regulatory Documents. T.O. 00-25-252, <i>Intermediate Maintenance and Depot Level Maintenance Instructions – Aeronautical Equipment Welding</i> , American Welding Society (AWS) specification D17.1, <i>Fusion Welding, Gas Tungsten Arc Welding (GTAW)</i> , AWS D17.2, <i>Specification for Resistance Welding for Aerospace Applications</i> , American Welding Society (AWS) specification D17.2, <i>Specification for Resistance Welding for Aerospace Application</i> , T.O. 00-25-224, <i>Welding High Pressure and Cryogenic Systems</i> , applicable AFOSH standards, TOs and other directives.
14.39.8.22.2. (Added) Lead Maintenance Wing. OC-ALC, Tinker AFB, Oklahoma.
14.39.8.22.3. (Added) Application. Applies to welding (i.e. not temporary spot/tack) performed on aircraft, aircraft engines, aerospace components to include propulsion system components and missiles.
14.39.8.22.4. (Added) Qualification. All welders shall be qualified in accordance with ANSI/AWS D17.1, TO 00-25-252 and applicable TOs and directives. Welders who perform electron beam welding, resistance, dabber tungsten inert gas and plasma arc shall be GTAW qualified if they also perform manual welding within any of these processes. Resistance Welding Machine Operators who perform spot/tack welding in accordance with AWS D17.2 do not require SSQ if the weld produced serves as a temporary function of the welding production process. Welders performing welding on high pressure or cryogenic systems shall qualify to TO 00-25-224. Qualification is granted upon successful completion of the required training and demonstration of proficiency to an SSQ Qualification Official. Operators shall pass an eye exam as specified by AWS D17.1. Local waivers may be granted on a case by case basis where these vision requirements are not necessary for the work being performed.
14.39.8.22.5. (Added) Re-qualification. A welder or welding operator shall be re-qualified every 12 months for resistance and electron beam welding, every 24 months for automated welding processes, and every 60 months for manual welding processes. Re-qualification is also required when there is a specific reason to question the ability of a welder or welding operator to meet the requirements for qualification in a given welding process.
14.39.8.22.6. (Added) Disqualification. Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, failure to weld within the qualified process using the appropriate material in accordance with TO 00-25-252 interval, failure to pass eye exam or obtain waiver, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification.

14.39.8.23. (Added) Thermal Spray.
14.39.8.23.1. (Added) Regulatory Documents. ANSI/AWS C2.16, <i>Guide for Thermal Spray Operator Qualification</i> , and applicable AFOSH standards, TOs, job guides and other directives that apply to the process.
14.39.8.23.2. (Added) Lead Maintenance Wing. OC-ALC, Tinker AFB, Oklahoma
14.39.8.23.3. (Added) Application. Applies to all personnel who perform thermal spray on aircraft, aircraft components, propulsion system components, missiles components, and jet engine components.
14.39.8.23.4. (Added) Qualification. Qualification is granted upon the completion of required training, completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.23.5. (Added) Re-Qualification. Re-qualification is required every 24 months and shall include completion of a written test, (85 percent correct minimum passing score, corrected to 100 percent), and demonstration of proficiency to an SSQ Qualification Official.
14.39.8.23.6. (Added) Disqualification. Observed deficiencies or deviation from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives shall be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met to be re-qualified.
14.40. (Added) Precision Measurement Equipment Laboratory (PMEL) Squadron/Flight:
14.40.1. (Added) Maintains, calibrates and certifies Test, Measurement and Diagnostic Equipment (TMDE), traceable through the AF Primary Standards Laboratory (AFPSL) to the National Institute of Standards and Technology (NIST), or other AF Metrology and Calibration (AFMETCAL) approved source. Provides base-level support of aircraft, precision guided munitions, ground systems and other equipment assigned to the ALC or geographically separated units. It consists of a Type IIA PMEL, Organic Depot On-Site Calibration Flight/Section, Production Control Flight/Section, a Quality Program (QP) Section, and a Technical Order Distribution Office (TODO) or Technical Order Distribution Account (TODA).
14.40.1.1. (Added) PMEL performs in-laboratory and on-site calibration and repair using laboratory equipment and calibration standards, Transportable Field Calibration Unit (TFCU), Portable Automatic Test Equipment Calibrator (PATEC), Jet Engine Test Cell/Stand Calibrator (JETSC).
14.40.1.2. (Added) PMEL calibrates, certifies and maintains TMDE IAW TO 00-20-14, <i>Air Force Metrology and Calibration Program</i> , 33K-1-100-1, <i>Calibration Procedure For Maintenance Data Collection Codes and Calibration Measurement Summaries</i> , and the

supported CMS.
14.40.1.3. (Added) The PMEL will provide repair and calibration support on all TMDE and associated systems for all ALC units, tenant organizations located on the ALC, and AF units within a small geographical region.
14.40.1.4. (Added) The ALC Type IIA PMEL will also provide repair and calibration support on all TMDE in an assigned geographical area as defined by TO 00-20-14.
14.40.1.5. (Added) The PMEL Squadron/Flight shall provide the ALC with Organic on-site repair and calibration support for the Organic Calibration Workload TMDE that shall not be transported to the Type IIA PMEL.
14.40.2. (Added) Workload Definitions.
14.40.2.1. (Added) Organic Calibration Workload: Organic PMEL support at an ALC will include the following:
14.40.2.1.2. (Added) All on-site non-portable TMDE located at the ALC.
14.40.2.1.3. (Added) Peculiar TMDE in the following categories:
14.40.2.1.4. (Added) Proprietary TMDE. Documentation demonstrating the proprietary limitations imposed by the manufacturer must be in the Organic PMEL's possession.
14.40.2.1.5. (Added) One-of-a-kind TMDE that differs significantly from common TMDE in length of calibration, difficulty of calibration or requiring special training.
14.40.2.1.6. (Added) Commercial off the shelf (COTS) TMDE no longer commercially supported that must be maintained due to its use in a production line or other direct core support. If a known commercial replacement alternative exists, this option will not be used.
14.40.2.1.7. (Added) TMDE critical to a one-of-a-kind test stand or production line.
14.40.2.1.8. (Added) TMDE imbedded in test stand(s) that is time prohibitive to remove for submission to the Type IIA PMEL. Analysis determining this provision must be documented.
14.40.2.2. (Added) The Type IIA PMEL calibration workload at an ALC will include the following:
14.40.2.2.1. (Added) Type IIA PMEL support (usually contractor supported) on an ALC will include all off-base geographically supported workload.
14.40.2.2.2. (Added) All common portable TMDE. This includes all portable test equipment designated TMDE in TO 33K-1-100 and any test stand or production line TMDE that is not

calibrated as a system, except peculiar TMDE as outlined in paragraph 14.40.2.1.3. (Added) above.
14.40.2.3. (Added) Depot structure templates (jigs, alignment fixture, and build up fixtures) shall be calibrated.
14.40.2.3.1. (Added) If designated as PMEL responsibility by TO 33K-1-100-2 or applicable Calibration Measurement Summary (CMS), the Organic PMEL shall accomplish the calibration.
14.40.2.3.2. (Added) If designated as a “User Responsibility” by TO 33K-1-100-2 or applicable CMS, the using organization shall accomplish the calibration. Calibration must as a minimum be accomplished with a valid technical order, calibration or alignment procedure and be documented IAW TO 00-20-14, Section 5 procedures.
14.40.3. (Added) PMEL Chief/PMEL Manager Responsibilities. In addition to common responsibilities in Chapter 3 of this instruction, the Chief shall:
14.40.3.1. (Added) Maintain PMEL certification IAW this instruction, TO 00-20-14; TO 33K-1-100-2-CD-1; CMSs; AFI 21-113, <i>AF Metrology and Calibration (AFMETCAL) Program</i> ; and AFMAN 32-1094, <i>Criteria for AF Precision Measurement Equipment Laboratory Design and Construction</i> .
14.40.3.2. (Added) Ensure calibration and repair support for host, tenant, and off-base supported TMDE that is designated as a PMEL responsibility in TO 33K-1-100-2-CD-1 or appropriate CMS.
14.40.3.3 (Added) Establish and maintain a priority maintenance support plan for mission essential support equipment. As a minimum, the plan must ensure qualified PMEL personnel are readily available to support mission essential maintenance requirements.
14.40.3.4. (Added) Establish a customer relations program to provide technical assistance, advice and to obtain customer feedback on TMDE matters. The program must include periodic visits, telecommunications contact or locally-developed customer survey letters sent to all on and off-base owning work center (OWC) customers at least annually. Maintain records documenting these visits, contacts, and surveys.
14.40.3.5. (Added) Ensure the Facilities Equipment Management System (FEMS) is administered, maintained and operated IAW 33-series AF instructions and 5000-series AF System Security Instructions and FEMS <i>Manual</i> .
14.40.3.6. (Added) Be responsible for all PMEL operations to include: scheduling, planning, quality (organic/contract), and maintenance/ calibration (organic/contract). The support organization shall be organized within the PMEL as a single function.
14.40.3.7. (Added) Consolidate all PMEL on-site maintenance/calibration functions into one or

more sections aligned under the PMEL Functional Area Chief.
14.40.3.8. (Added) Identify environmentally controlled PMEL facilities used for calibration and appoint a single POC to manage the environmental records of the identified facilities.
14.40.3.9. (Added) Comply with management responsibilities IAW TO 00-20-14. Identify and track trends per section 9 of TO 00-20-14. Develop action plans to reinforce positive trends and minimize negative trends.
14.40.3.10. (Added) Ensure JETSC, PATEC and TFCU are maintained as complete sets and available for immediate peacetime or wartime deployment.
14.40.3.11. (Added) Approve priority calibration or repair requests.
14.40.3.12. (Added) When designating individuals who may approve priority calibration or repair request the PMEL Flight Chief will delegate approval authority in writing.
14.40.3.13. (Added) Maintain equipment and TO accounts as necessary for the purpose of identifying mobilization requirements.
14.40.3.14. (Added) Ensure compliance with the Tool and Equipment Management Program IAW Chapter 10 of this instruction.
14.40.3.15. (Added) Ensure a system is established to periodically review all TMDE in deferred and in-maintenance status.
14.40.3.16. (Added) Establish security procedures to protect classified TMDE IAW AFI 31-401, <i>Information Security Program Management</i> .
14.40.3.17. (Added) Identify earned reimbursements to the local Defense Finance & Accounting Service (DFAS) accounting liaison (or alternate office) for billing and collection not later than (NLT) 30 days after the month in which the reimbursement was earned. Reimbursement documentation will include, as a minimum, receipts for materiel expenses (i.e., DD Form 1348-1, <i>DoD Single Line Item Release/Receipt Document</i> , or commercial supplier equivalent) and data for labor expenses (i.e., category of labor, total hours expended, civilian/military pay grade). TMDE flight will retain reimbursement source documents on file IAW <i>AF Records Disposition Schedule</i> located at https://www.my.af.mil/gcss-af61a/afrims/afrims/rims.cfm
14.40.3.18. (Added) Ensure support agreements with off-base users and tenants organizations establish a TMDE Collection Point (preferably one per group or equivalent). This requirement also applies to all ANG activities.
14.40.3.18. (Added) Approve CANNs after coordination with owning work centers (OWCs). The PMEL CC/Flight Chief may delegate this authority. The delegate approval authority shall be in writing.

14.40.3.19. (Added) Establish a program to control and issue K stamps. The PMEL CC/Flight Chief may delegate, in writing, this authority to the quality office.
14.40.4. (Added) PMEL Quality Assurance Section. The QP is established by the PMEL Chief and the PMEL Quality Manager/Section Supervisor or equivalent is responsible to the PMEL Chief. The PMEL QP is outlined in TO 00-20-14 and this chapter. The QP will be used in conjunction with the MSEP in Chapter 8 of this instruction. However, over-the-shoulder and quality verification inspections will not be performed by Maintenance Standardization and Evaluation Team (MSET)/ Logistics Compliance Assessment Team (LCAT) inspectors.
14.40.4.1. (Added) The TMDE Flt Chief shall:
14.40.4.1.1. (Added) Appoint qualified AFSC 2P071 Craftsman or Civil Service equivalent personnel as PMEL Quality Assurance (PQA) section NCOIC and PQA evaluators, and may appoint PQA augmentees.
14.40.4.1.2. (Added) Publish a monthly QP summary and route it through to the SQ/CC (or organizational equivalent). The report format should comply with TO 00-20-14 and meet local requirements. Additionally, send an electronic copy to the HQ AFMC/A4MM PMEL Functional Manager.
14.40.4.2. (Added) PQA Section Manager or equivalent and PQA evaluators shall:
14.40.4.2. 1. (Added) Perform technical evaluations and review TMDE production processes, products, and services to assess equipment condition, process compliance, calibration traceability, personnel proficiency/competency, and quality of training. Inform the Metrology Support Flight Chief or equivalent of findings.
14.40.4.3. (Added) Evaluate nonconformity and problem areas to find the root cause IAW TO 00-20-14. Log nonconformities, root causes and corrective actions in FEMS/MIS.
14.40.4.4. (Added) Establish a system to track the status of TO improvement reports and DRs for compliance IAW TO 00-5-1 and TO 00-35D-54. Download monthly TO Improvement Status (TOIS) Listing from the AFMETCAL METWEB homepage at https://metweb.afmetcal.af.mil/ .
14.40.4.5. (Added) Verify AFTO IMTs 45, <i>Request for Calibration Responsibility Determination</i> , and maintain a suspense file until changes are incorporated into WUC manuals. Download and review Calibration Determination Listing from the AFMETCAL METWEB homepage https://metweb.afmetcal.af.mil/ .
14.40.4.6. (Added) Manage items in the following FEMS status: item calibrated awaiting Quality Review (QR), DR exhibit and items waiting Process Review (PR) IAW TO 00-20-14.
14.40.4.7. (Added) Inspect completed PMEL Automated Management System (PAMS) job

documentation in conjunction with QR for time accounting, accuracy, completeness, and appropriate action taken and how malfunction (HOW MAL) code correlation. Report trends quarterly to Metrology Support Flight Chief or equivalent.
14.40.5. (Added) Production Control Section Supervisor. The Production Control Section Supervisor is responsible to the MSFC. The section consists of customer service, production scheduling, traffic management, and maintenance supply liaison elements. Additionally, ensure a 2S0X1 or civilian equivalent Supply Management individual on a full-time basis. Uses FEMS or equivalent MIS to maintain an accurate master identification listing, process equipment, and to provide current status of all TMDE.
14.40.5.1. (Added) Customer Service Function. Establishes procedures for turn-in and pick-up of TMDE. Emergency equipment is accepted at any time. In addition, Customer Service Function personnel shall:
14.40.5.2. (Added) Process incoming TMDE using FEMS/MIS equipment schedules, FEMS/MIS directives, and TOs. Inspect each incoming TMDE item to determine exterior condition IAW TO 33-1-27, <i>Logistic Support of Precision Measurement Equipment</i> . For unscheduled TMDE malfunctions, determine AFTO Form 350, <i>Reparable Item Processing Tag</i> , or equivalent form discrepancy documentation adequacy. Notify the OWC when documentation is inadequate, paperwork is incomplete, TMDE is missing item(s), or TMDE/paperwork is excessively dirty. The PMEL may return these items for correction prior to processing into PMEL.
14.40.5.3. (Added) Produce monthly TMDE schedules and quarterly master ID lists at least 5 work days prior to the first duty day of the month and distribute to OWCs for correction and verification. TMDE schedules and quarterly master ID lists may be distributed via e-mail and/or webpage. Schedules for OWCs are not required when there are no items in maintenance or overdue status. Establish a tracking and a suspense system for return of corrected listings.
14.40.5.3.1. (Added) Overdue TMDE. OWC shall not use AFTO Form 244/245, <i>Industrial/Support Equipment Record</i> , to document overdue calibrations. Use AFTO Form 350, <i>Reparable Item Processing Tag</i> , to document overdue calibrations.
14.40.5.4. (Added) Notify OWC monitors within 10 calendar days (20 calendar days for remote or off-base locations) of TMDE not delivered on or before the scheduled date due calibration. Maintain a log of all contacts concerning overdue TMDE. For remote and off-base locations, notification is not required if the PMEL has received an advance copy of shipping documentation. Overdue calibration notifications shall include a statement to remove TMDE from service IAW AF instructions unless a date due calibration extension has been requested and approved by the owning Lead Command IAW TO 00-20-14. Notify the Commander (or equivalent) by letter when the OWC routinely fails to deliver or schedule delivery within a reasonable period following notification.
14.40.5.5. (Added) Train TMDE monitors and maintain a database or log of training (dates, names, organizations, etc.).

14.40.6. (Added) Production Scheduling Function personnel shall:
14.40.6.1. (Added) Accept TMDE from customers, but may reject TMDE until the OWC complies with their responsibilities IAW TO 00-20-14; TO 15X-1-102, <i>General Care and Cleaning of Oxygen Gauges and Oxygen Device Related Test Equipment</i> ; TO 33-1-27, and TO 37C 11-1-1, <i>Maintenance Instructions -- Cleaning of Pressure Gauges Used on Liquid Oxygen Systems</i> , (e.g., submit equipment with batteries, set torque wrenches at the lowest setting prior to delivery, deliver accessories with TMDE).
14.40.6.2. (Added) Establish a workload (except for Cost Class 1 and Cost Class 4 workloads) leveling program through daily coordination with customers to maintain a level incoming workload. Advise PMEL CC/Flight Chief through the Production Control Section manager of significant increases in workload or deviations from monthly schedule.
14.40.6.3. (Added) Establish a Hold Area for TMDE requiring technical data or accessories, awaiting instructions from item managers, etc. Notify OWCs of the change to a deferred status. Return items awaiting technical data or accessories if the OWC does not respond in a timely manner after being notified.
14.40.6.4. (Added) Establish an awaiting shipment area for TMDE shipped to another organization and maintain a database or file with associated documents.
14.40.6.5. (Added) Use FEMS/MIS to control TMDE processed for maintenance. Ensure the current status of all TMDE processed into the PMEL for repair and calibration is reflected in the FEMS/MIS database.
14.40.6.6. (Added) Correct the FEMS/MIS master ID database NLT 3 workdays after receipt of customer corrections.
14.40.6.7. (Added) Notify customers of completed TMDE. Take action to resolve problems with customers who fail to pick-up completed TMDE within a reasonable period.
14.40.6.8. (Added) Reasonable period is defined as, within five duty days after being notified equipment is ready for pick up. For geographically separated users, coordinate with the PMEL CC/Flight Chief to establish acceptable number of days to pick-up completed TMDE.
14.40.6.9. (Added) Manage and schedule TMDE TCTOs IAW Chapter 7 in this instruction.
14.40.6.10. (Added) To avoid abuse of the TMDE priority system, the PMEL/Flight Chief will assist OWC personnel in locating TMDE to meet their mission requirements. The OWC should attempt to meet mission requirements prior to requesting emergency or mission essential support. Schedule TMDE using one of the following categories:
14.40.6.10.1. (Added) The PMEL/Flight Chief may add other priority categories if needed.

14.40.6.10.1.1. (Added) Emergency Calibration or Repair: One-of-a-kind TMDE that is inoperable or due calibration and for which a critical job is at a work stoppage.
14.40.6.10.1.1.1. (Added) A letter of justification signed by the OWC CC/ Flight Chief or equivalent must accompany the TMDE. The priority letter may be handwritten to prevent delay. Telephone verification between the OWC and PMEL is highly encouraged.
14.40.6.10.1.1.2. (Added) PMEL must accept emergency TMDE at any time. Immediate and continuous repair action is required until repair/calibration is completed or status of the item changes (e.g., AWP, deferred for lack of standards or technical data).
14.40.6.10.1.1.3. (Added) PMEL management may require an OWC technician to accompany the TMDE. The technician will remain at the PMEL to provide technical assistance until the work is completed or placed in an interim-complete status.
14.40.6.10.1.1.4. (Added) The OWC or using organization must pick up the TMDE immediately upon notification of completion.
14.40.6.10.1.2. (Added) Mission Essential Calibration or Repair. One-of-a-kind or one-deep TMDE that is part of a unit's deployment package, is critical to daily peacetime operations, or TMDE assets falling below critical availability levels.
14.40.6.10.1.2.1. (Added) A letter of justification signed by the OWC CC/ Flight Chief or equivalent will accompany the TMDE unless pre-identified by OWC Flt CC/Chief and approved by TMDE Flt Chief or delegated approval authority.
14.40.6.10.1.2.2. (Added) PMEL must accept mission essential TMDE any time during duty hours and schedule it with sufficient priority to ensure the calibration/repair is complete by the date and time specified by the customer.
14.40.6.10.1.2.3. (Added) The OWC or using organization must pick up the TMDE immediately upon notification of completion.
14.40.6.10.1.3. (Added) Routine Calibration or Repair. TMDE not categorized as emergency or mission essential. PMEL must accept routine TMDE during normal turn-in and pick-up hours. Turn-in and pick-up hours shall be established by the PMEL CC/Flight Chief.
14.40.6.10.1.4. (Added) Shipment of TMDE. Processes TMDE items needing contract, warranty, depot or lateral calibration/repair and return through local traffic management flight (TMF) IAW this instruction and AFI 24-201, <i>Cargo Movement</i> . Shipping personnel shall:
14.40.6.10.1.4.1. (Added) Process TMDE shipped off base for calibration or repair and return, including warranty and contract items. TMDE is accountable property with an expiration date (date-due calibration) and must be shipped by traceable means. All installation TMDE items must be shipped through the TMF IAW TO 00-20-14 and other applicable publications.

14.40.6.10.1.4.2. (Added) Retain and file hard copy source documents for all inbound and outbound (contract, warranty, depot and lateral) shipments IAW <i>AF Records Disposition Schedule</i> located at https://www.my.af.mil/gcss-af61a/afirms/afirms/rims.cfm .
14.40.6.10.1.4.3. (Added) Use the FEMS/MIS shipping module to the fullest extent possible. If PAMS is not available, manual backup methods shall be employed.
14.40.6.10.1.4.4. (Added) Track TMDE in FEMS/MIS maintenance statuses “DEPOT” and “CONTR”. Maintain file consisting of all supporting documentation for each type of shipment.
14.40.6.10.1.4.5. (Added) . Establish and implement a reusable container program IAW AFI 24-203, <i>Preparation and Movement of Air Force Cargo</i> .
14.40.6.10.1.4.6. (Added) Outbound Shipments. Prepare DD Form 1149, <i>Requisition and Invoice/Shipping Document</i> , for each shipment. All copies of the DD Form 1149 are stamped “TMDE” in one-inch letters using red ink. The form must contain the words “DO NOT POST/PROJECT CODE 571” in block 4, and “SUPPLY INSPECTION NOT REQUIRED-SHIP BY TRACEABLE MEANS ONLY”; and either “CONTAINS HAZARDOUS MATERIAL” or “CONTAINS NON-HAZARDOUS MATERIAL.” in section B.
14.40.6.10.1.4.6.1. (Added) Use AF Form 537, <i>PME Shipping</i> , for all TMDE shipments delivered to the packing and crating activity. Include an AFTO Form 350 with each unserviceable TMDE item.
14.40.6.10.1.4.6.2. (Added) Retain two legible copies of the DD Form 1149 signed by packing and crating personnel. Ensure these copies contain sufficient information to identify the owner or user, part number, NSN, ID or serial number, nomenclature, and the Transportation Control Number (TCN) assigned by the transportation activity.
14.40.6.10.1.4.6.3. (Added) Retain one copy of the DD Form 1149 until the shipment is received at the destination point, then file the DD Form 1149 IAW <i>AF Records Disposition Schedule</i> , located at https://www.my.af.mil/gcss-af61a/afirms/afirms/rims.cfm ; mark the other copy as “Advance Copy” and mail/ electronically transmit it to the destination point. Initiate tracer action if shipping time exceeds standards in AFI 24-201 and follow-up with the destination point within 30 calendar days of the shipping date.
14.40.6.10.1.4.7. (Added) Inbound Shipments. Place the “Advance Copy” of the DD Form 1149 received from the shipping organization in a suspense file. Notify the TMF to initiate tracer action if shipping time exceeds standards in AFI 24-201.
14.40.6.10.1.4.7.1. (Added) Reconcile the inbound “Advance Copy” DD Form 1149 with the shipping DD Form 1149 document and clear the suspense. Sign the “Advance Copy” and mail/electronically transmit it to the originator.
14.40.6.10.1.4.7.2. (Added) Update the FEMS maintenance file ID listing and route the TMDE

through designated official for incoming inspection. Report damage attributable to shipping through the TMF. Retain copies of the report of damage with the respective DD Form 1149.
14.40.6.10.1.4.8. (Added) Maintenance Supply Support Function. Manage the flight's maintenance-supply actions IAW Chapter 11 of this instruction and AFMAN 23-110, and provide assistance to other flight personnel to resolve supply problems. The assigned supply journeyman/craftsman shall:
14.40.6.10.1.4.8.1. (Added) Establish an "AWP/Equipment Inoperative for Parts (EIP)" storage area. Maintain TMDE and expendable parts accountability and control. Track status of TMDE in FEMS using maintenance status "AWP/ EIP" and "in-service AWP".
14.40.6.10.1.4.8.2. (Added) Maintain source document audit trail accountability for all demands on supply. Ensure validity and completeness of supply requisition forms. Verify and monitor UJCs and Standard Reporting Designator (SRD) codes.
14.40.6.10.1.4.8.3. (Added) Maintain bench, operating, and shop stocks. Dispose of property containing precious metals IAW AFMAN 23-110.
14.40.6.10.1.4.8.4. (Added) Maintain MICAP records and initiates follow-up actions on MICAP requisitions.
14.40.6.10.1.4.8.5. (Added) Monitor backordered requisition status and maintains liaison with supply personnel. Initiate supply assistance requests for supply difficulties. Submit follow-up actions (document identifier code "AFC") to supply for requisitions with unacceptable status or unacceptable estimated delivery dates.
14.40.6.10.1.4.8.5.1. (Added) Notify the OWC of TMDE status change to AWP and backorder/delivery status of parts on order.
14.40.6.10.1.4.8.5.2. (Added) Coordinate with customers to obtain mission impact statements to substantiate supply assistance requests. Establish a suspense system and follow-up to ensure correspondence is received and acted on.
14.40.6.10.1.4.8.5.3. (Added) Consider assigning NRTS codes to TMDE exceeding 60 days in "AWP/EIP" status. Coordinate with supply personnel to initiate follow-up action with the item manager of the repair parts beginning at the 60th day in status. If parts delivery does not occur by the 90th day in status, coordinate with supply personnel to contact the item manager of the end item for disposition instructions.
14.40.6.10.1.4.8.6. (Added) Maintain accountability for issues and turn-ins of DIFM repair cycle assets IAW AFMAN 23-110 and TO 00-20-3.
14.40.6.10.1.4.8.7. (Added) Establish TMDE shelf-life program IAW AFMAN 23-110.
14.40.6.10.1.4.8.8. (Added) Assist Government Purchase Card (GPC) holders in administering

and coordinating purchases.
14.40.6.10.1.4.8.9. (Added) Requisition and control TCTO kits IAW Chapter 7 of this instruction and TO 00-5-15, <i>AF Time Compliance Technical Order Process</i> .
14.40.6.10.1.4.8.10. (Added) Recommend cannibalization (CANN) actions to PMEL CC/Flight Chief or civilian equivalent.
14.40.6.10.1.4.8.11. (Added) Monitor and control AWP TMDE using supply generated and internally generated reports.
14.40.6.10.1.4.8.12. (Added) Store parts received for AWP items with the end item.
14.40.6.10.1.4.8.13. (Added) Attach a copy of source document of outstanding requisitions with AWP TMDE.
14.40.6.10.1.4.8.14. (Added) Transfer all items that come out of awaiting parts to awaiting maintenance when all parts are received.
14.40.6.10.1.4.8.15. (Added) Perform validation of supply generated reports at the specified frequency IAW AFM 23-110.
14.40.6.10.1.4.8.16. (Added) Manage bench stocks to ensure current listings are available, contents of bench stocks are limited to frequently used parts, and establish fill quantities.
14.40.6.10.1.4.8.17. (Added) Maintain records and source documents for repair parts used in equipment belonging to reimbursable work centers.
14.40.6.10.1.4.8.18. (Added) Submit a monthly report to PMEL CC/ Flight Chief to facilitate processing of requests for reimbursement.
14.40.6.10.1.4.8.19. (Added) Records are not necessary if the reimbursable unit's supply account is used for purchasing their own repair parts.
14.40.6.10.1.4.9. (Added) PMEL Section Manager (PSM)/ Metrology Support Flight Chief (MSFC) or civilian equivalent is responsible to the PMEL CC/ Flight Chief. In addition to the PMEL Managers' responsibilities listed in Chapter 3 of this instruction and in TO 00-20-14, the PSM/MSFC shall:
14.40.6.10.1.4.9.1. (Added) Ensure timely verification of new and updated calibration TOs distributed to the PMEL for review, including beta tests of software IAW TO 00-5-3, <i>Technical Manual Acquisition Procedures</i> . Annotate comments (enhancements and discrepancies) on AFTO Form 158, <i>Technical Order Review Comment Sheet</i> .
14.40.6.10.1.4.9.2. (Added) Ensure currency of software used in manual/ automated calibration

procedures and software used to pass/fail TMDE parameters. All such software must possess a valid Computer Program Identification Number (CPIN) or 33K10 designator, see TO 00-5-17, <i>Users Manual -- USAF Computer Program Identification Numbering System (CPIN)</i> .
14.40.6.10.1.4.9.3. (Added) Evaluate TMDE AWM, AWM from deferred (AFD), and in-work (INW) cycle time/turnaround time adequacy daily. Initiate corrective action necessary to balance workload and capacity (production).
14.40.6.10.1.4.9.4. (Added) Ensure work area supervisors perform and document weekly follow-ups on TMDE in all deferred statuses.
14.40.6.10.1.4.9.5. (Added) Annually review, identify, and code PMEL owned TMDE in FEMS as working standard or not applicable; document the review and retain on file until a subsequent review.
14.40.6.10.1.4.9.6. (Added) Designate work area supervisors to:
14.40.6.10.1.4.9.6.1. (Added) Supervise and direct the work efforts of the work area team and share responsibility for maintenance quality. Establish processes to ensure work area maintenance practices produce traceable, clean, safe to use TMDE with optimal physical condition and accurate documentation.
14.40.6.10.1.4.9.6.2. (Added) Coordinate with production schedulers to ensure FEMS accurately reflects correct maintenance status for all TMDE applicable to the work area. Also, ensure accuracy and completeness of data entered in FEMS.
14.40.6.10.1.4.9.6.3. (Added) Perform production and supervisory inspections IAW Chapter 14 , Table 14.1 of this instruction, sign condition tags, validate/verify NRTS conditions, identify/clear repeat and CND discrepancies, etc.
14.40.6.10.1.4.9.6.4. (Added) Resolve production difficulties when the in maintenance cycle time exceeds 7 calendar days.
14.40.6.10.1.4.9.6.5. (Added) Ensure work area team members formally report instances of substandard materiel or supplier performance. Prepare and submit AF IMT 1815, <i>Difficulty Report (DIREP) Worksheet</i> ; AFTO IMTs 22, <i>Technical Manual (TM) Change Recommendation and Reply</i> , SF 368, <i>Product Quality Deficiency Report</i> ; and all other supplier feedback documents pertinent to PMEL processes. Route all documents through the QP section for coordination and tracking.
14.40.6.10.1.4.10. (Added) TMDE Technical Order Distribution Office (TODO)/Technical Order Distribution Account (TODA). The TODO/TODA is responsible to the TMDE Flt CC/Chief and maintains TO, TCTO, CPIN and commercial data files IAW TO 00-5-1 and TO 00-5-17. The TODO/TODA shall:
14.40.6.10.1.4.10.1. (Added) Follow up weekly on TMDE in deferred maintenance status for

lack of TOs or commercial data.
14.40.6.10.1.4.10.2. (Added) Maintain preliminary (draft) TO files and associated documentation from TO verification and post publication reviews.
14.40.6.10.1.4.10.3. (Added) Review AFMETCAL METWEB homepage at https://metweb.afmetcal.af.mil/ weekly for new Interim Safety Supplements (ISSs) and Interim Operational Supplements (IOSs).
14.40.6.10.1.4.10.4. (Added) Retain and file TODO Account Reconciliation Report (ARR), and other related TO records IAW <i>AF Records Disposition Schedule</i> located at https://www.my.af.mil/gcss-af61a/afrims/afrims/rims.cfm .
Chapter 15 - MAINTAINING COMMERCIAL DERIVATIVE AIRCRAFT
15.1. Background Information and Objective. Modifications, repairs and overhauls accomplished by organic or commercial depot maintenance activities to AF commercial derivative aircraft having FAA certification shall not cause the aircraft to lose its FAA certification. All depot maintenance activities and organizations associated with commercial derivative aircraft must comply with the respective TOs and/or aircraft manuals. All modifications, repairs, and overhauls to commercial derivative aircraft by organic or contractor depot maintenance activities shall be performed in an FAA certified Part (Pt.) 145 Repair Station or military equivalent facility. (See Code of Federal Regulations (CFR), Title 14, Chapter 1, Part (Pt.) 145--Repair Stations.)
15.3.4. Organic depot maintenance may use a Certificate of Conformance or Return to Service certification when applicable for the FAA approved maintenance processes for a specific workload.
15.6. Certification Requirements. Organic depot maintenance can be performed on commercial derivative aircraft in an organic FAA certified Part 145 repair station or military equivalent facility. Air Force military and civilian maintenance technicians performing maintenance in an organic FAA certified Part 145 Repair Station or military equivalent facility work under the authority of that specific repair station typically do not require individual FAA certification. Only those inspectors authorized by the repair station to issue a Certificate of Conformance or return an item to service are required to be FAA certified (Airframe, Power plant, or Repairman certification).
15.7. Inspection Requirements. Depot maintenance accomplished either organically or commercially on Commercial Derivative Aircraft will comply with inspection requirements.
15.8. Deviations From Inspection Requirements. For proposed changes to requirements or intervals involving depot maintenance, the SPD must send those to HQ AFMC/A4 for evaluation.

15.11. Aircraft and Component Modifications. AF aircraft and components having FAA certification, when accomplished in Air Force depot maintenance activities shall not cause the aircraft to lose its FAA certification. All modifications to such aircraft shall comply with AFD 62-4, *Civil Airworthiness Standards for Passenger Carrying Commercial Derivative Transport Aircraft*, and AFD 62-5, *Standards of Airworthiness for Commercial Derivative Hybrid Aircraft*. Such modifications are required to keep the weapon system or aircraft in compliance with FAA standards and to maintain FAA certification.

Chapter 16 - AIRCREW EGRESS SYSTEMS MAINTENANCE

This section intentionally left blank. No supplemental data necessary.

Chapter 17 - CENTRALIZED REPAIR FACILITIES (CRFS)

17.3. Command Authority. When a Repair Network is established, production oversight and monitoring within the repair network will be accomplished by the Repair Network Manager (RNM).

17.3.1. The Repair Network Integration (RNI) Program Management Office (PMO) will be the integrator between AFMC and the Air Staff regarding AF policy development for the Air Force Repair Network.

17.3.2. When a Repair Network is established, CRF production will be monitored by the Product Repair Manager (PRM) and RNM.

17.3.3. When a Repair Network is established, CRF commodity distribution will be a collaborative effort between the PRM, RNM, AFGLSC, DLA, and Repair Nodes. Production serviceable assets are released per SPRS sequence and changes to this are coordinated through the appropriate MAJCOM. The repairable assets should be distributed per the collaboration effort. The serviceables should be distributed by SPRS.

17.3.5. When a Repair Network is established, the RNM will coordinate requirements with the AFGLSC Supply Chain Weapon System Teams to monitor enterprise health of the managed commodities. Negative trends will be dealt with IAW Repair Network policy.

17.3.8. Repair Enterprise Managers (PRM/RNM, etc) will develop clear guidance on Metrics/Status reporting requirements for the commodities within the Repair Enterprise as outlined in Repair Network policy. Metrics/Status Report requirements will be accomplished by the RNM and coordinated as outlined in Repair Network policy.

17.5. Rotable Pools. CRP requirements for items managed in the propulsion network will be determined using the Propulsion Requirements System (PRS) process outlined in AFI 21-104, *Selective Management of Selected Gas Turbine Engines*.

17.6.1. When a Repair Network is established, management of "CANN Assets" within the network will rest solely with the RNM as outlined in Repair Network policy.

17.8. Metrics. When a Repair Network is established, CRF managers will report required Metrics to the RNM for consolidation. The RNM will report Network Metrics IAW Repair Network policy.
17.10.4.1. When a Repair Network is established, the PRM/RNM will participate in all AEF requirements development processes. COMAFFOR/A4 and supporting command A4 will coordinate requirement changes through the PRM/RNM for implementation.
17.10.4.2. When a Repair Network is established, the RNM will work with the CRF supporting command to determine the best location for the CRF and outline CRF spare levels, equipment/personnel requirements, and CONOPS ensuring the effect on the Repair Network Enterprise is appropriately considered..
17.10.4.4. When a Repair Network is established, all supported unit requirements will be coordinated through the RNM for sourcing decisions. In situations where COMAFFORs compete for CRF resources, the A4 staffs, supporting commands, and AFGLSC will reach agreement on asset distribution. The RNM does not direct asset distribution (in some cases, the RNM will reside in AFGLSC), they provide recommendations. The AFGLSC is charged with asset distribution. If required, AF/A4 will be consulted to ensure priorities are satisfied correctly.
17.10.4.5. When a Repair Network is established, the RNM, in collaboration with the CRF supporting command and CRF management, will determine CRF capabilities utilizing the Capability and Capacity (CAP2) Tool as outlined in the Repair Network Implementation Guide.
17.10.4.5.1. AFGLSC will assist with kit management as required.
17.10.4.5.2. When a Repair Network is established; the RNM and CRF managers will determine distribution of assets among CRPs. Propulsion CRP levels will be determined using the PRS process.
17.10.4.6.3. When a Repair Network is established, retention of “CANN assets” will be coordinated between the COMAFFOR/A4, supported command, and RNM.
17.10.5.2. When a Repair Network is established, manual intervention of EXPRESS managed commodities will be directed by the RNM.
Chapter 18 -CONTRACT SURVEILLANCE
18. (Added) Introduction. The objective of logistics program management is to integrate the performance-based operation into the supported AF mission, monitor the life-cycle management of government property, and execute the business end of the AF programs. This chapter applies to AF units performing duties across the full spectrum of logistics. This includes conventional force logistics units; nuclear and nuclear support units; space; special operations; wholesale-level

procurement, sustainment, and maintenance; logistics support to research, test, and development units; and logistics support to special access programs. This chapter establishes guidelines for performance management and surveillance of performance-based activities performing make and repair activities which include all organizations within the wholesale and base-level logistics enterprise that conduct activities related to the manufacture and repair of assets to support weapon systems. This encompasses organizations that perform generation, launch, recovery, ground handling, and servicing of aircraft. It includes organizations that perform manufacturing, maintenance (organizational/ intermediate/depot to include on-equipment maintenance/repair and off-equipment maintenance/repair functions) repair, calibration, overhaul, or inspection of: aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities. This chapter shall be used in concert with AFI 63-101 and other applicable guidance, Federal Acquisition Regulation (FAR), etc, (or the instruction in existence at the time of contract award) This includes contracts totaling \$250K or more.

18.1. Government Contract Quality Assurance. COR is used to describe all government personnel appointed to provide surveillance of service contracts.

18.1.1. AFMC units to include Maintenance wings (ALCs), maintenance groups/maintenance divisions (test wings and AEDC) and air base wings which have performance-based maintenance or maintenance support activities shall establish a single, centralized program management office (PMO) also known as Contract Management Office (CMO). In the ALC, the MXW PMO office may be located with the MXW/QP. For installations which have performance-based maintenance and maintenance support activities shared between two or more wings, the wing which established the contract will be responsible for overseeing and managing the contractor's performance. The PMO will consist of a full time, dedicated staff to initiate, oversee and manage performance-based activities within the maintenance wing/group. The PMO will consist of a program manager(s), COR chief(s) and COR(s). The Chief COR may serve as both the program manager and Chief COR when the workload does not justify both positions. Additionally ACO/PCOs who administer the performance-based maintenance contracts may be assigned to the PMO to ensure a comprehensive team focused on administration and management of the contracted operations. The office may include subject matter experts from various functional areas (e.g., CE, communications, contracting, finance, plans, and logistics). All contracts will be coordinated with the PMO to ensure consistency and standardization of PWSs and to minimize the number of contracts for similar operations.

18.1.1.1. (Added) The PMO will:

18.1.1.1.1. (Added) Develop guidance for and coordinate on all Performance Plans (PP).

18.1.1.1.2. (Added) Ensure adequacy of training program for CORs and track training to ensure currency for Functional Commander/Functional Directors (FC/FD), Chief CORs and CORs.

18.1.1.1.3. (Added) Coordinate on all service contracts to ensure contractor operations at least meet minimum AF standards.

18.1.1.1.4. (Added) Ensure adequacy of Performance Work Statement (PWS)/Statement of Work (SOW) by utilizing S.M.A.R.T. concept. The performance threshold is a standard of an acceptable level of performance set for a task. Performance thresholds set clear, measurable points that the contractor can easily recognize as measures of performance. To be considered effective thresholds must meet certain criteria. A simple way to remember the threshold criteria is to use the acronym, SMART where “S” stands for Specific, “M” for Measurable, “A” for Attainable, “R” for Realistic and “T” for Time-bound. When the threshold does not meet these criteria, it is most likely to be ineffective and immeasurable. This concept, when utilized, will ensure the PWS/SOW captures specific, measurable, attainable, realistic, and timely (SMART) goals for the contractor and their quality assurance plan.
18.1.1.1.5. (Added) Avoid multiple contracts for the same or similar operations.
18.1.1.1.6. (Added) Ensure AF maintenance standards are included in the PWS/SOW where practicable. These standards include but are not limited to: tool control, FOD prevention, safety (where government resources are exposed to risk by contracted operations), <i>tool and</i> equipment management, and materiel control.
18.1.1.1.7. (Added) Ensure AF maintenance data collection and information management systems such as IMIS, FEMS, AMCS, IMDS, CEMS, G081, SBSS, and AFEMS are mandated in the PWS where practicable.
18.1.1.1.8. (Added) Conduct a quarterly review of activities with COR chief(s), CORs and ACO/PCOs.
18.1.1.1.9. (Added) Develop local procedures to ensure standardized Performance Management Assessment Plan (PMAP) and documentation.
18.1.1.1.10. (Added) Keep up-to-date on mission changes that could affect creation of a contract modification and advise the Multi-Functional Team (MFT) to include the FC/FD.
18.1.1.1.11. (Added) Oversee the development of a PMAP that effectively measures and evaluates contractor, MEO, or HPO performance throughout the life of the contract or management plan.
18.1.1.1.12. (Added) Ensure PMAP implements the requirements of applicable guidance and this chapter.
18.1.1.1.13. (Added) Review problem areas with the (MFT) to resolve the problems. If the problem cannot be resolved, advise the FC/FD and request assistance through command channels.
18.1.1.1.14. (Added) Review documents related to default/re-compete prior to scheduled recompetition; PWS requirements document or scope of work modifications; changes to award fee plan (if applicable); contractor, MEO, or HPO proposals to new or revised DoD, AF,

MAJCOM, and local directives.
18.1.1.1.14.1. (Added) Related documents include:
18.1.1.1.14.1.1. (Added) Intent or consideration to default or re-compete the contract prior to the scheduled recompetition.
18.1.1.1.14.1.2. (Added) Modifications to the contract involving changes to the statement of work, PWS, or scope of work requirements. Ensure cost estimates are included.
18.1.1.1.14.1.3. (Added) Changes to the award fee plan.
18.1.1.1.14.1.4. (Added) Locally procured maintenance/service contracts.
18.1.1.1.14.1.5. (Added) PWS/Statements of work (SOW) for all aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities maintenance/service contracts (includes transient alert contracts).
18.1.1.1.14.1.6. (Added) Contractor proposals to new or revised DOD, Air Force, MAJCOM, and local directives.
18.1.1.1.15. (Added) Coordinate waiver requests with the MAJCOM/A4 staff when initiated by the contractor, MEO, or HPO.
18.1.1.1.16. (Added) Ensure performance-based contract assessment tools (e.g. process and systems audits, compliance checklists, random sampling or other frequency-based inspection methods, etc.) are used to maximum extent possible monitor contractor, MEO, or HPO submission of required reports according to the contract Section C, PWS/SOW, requirements document, management plan, AFI, or MAJCOM publication according to the contract.
18.1.1.1.17. (Added) Ensure surveillance methods to monitor contractor, MEO, or HPO performance IAW federal, state, and local environmental laws and AF directives.
18.1.1.1.18. (Added) Ensure contracts contain a viable contingency plan for tasks identified as essential IAW DFARS Subpart 237.76, <i>Continuation of Essential DoD Contractor Services During Crisis</i> , and annually coordinate with PMO and PCO/ACO to revise, update, or change it.
18.1.1.1.19. (Added) Establish procedures for technical evaluation of contractor-submitted value engineering change proposals (if applicable).
18.1.1.1.20. (Added) Submit surveillance schedules IAW guidance of PMAP or performance plan to FC/FD for approval, as required.
18.1.1.1.21. (Added) Review publications for acceptance (when contractor generated) (e.g.,

wing-level instructions and group OIs) developed by the performance-based activity (contractor, MEO, or HPO) prior to final signature and implementation.
18.1.1.1.22. (Added) Establish a standard format for the monthly surveillance summary report.
18.1.1.1.23. (Added) will provide Government vehicles for centrally located CORs. CORs must have transportation to and from the contractor's location in order to provide timely support.
18.2.1. (Added) Facilities. When performance-based activity (contractor, MEO, and HPO) performance is required on base, then facilities are government owned and contractor operated (GOCO). When performance is required off base, then facilities are contractor owned and contractor operated (COCO).
18.3.2. (Added) Financial Management. The PMO shall annually (usually in March) ensure that the MAJCOM/FM Budget Office includes contract funding requirements in the FYDP. The PMO shall identify MEO and HPO personnel requirements for inclusion in the FYDP. Also, the PMO shall establish procedures to collect reimbursements when a performance-based activity (contractor, MEO, or HPO) provides support as a support agreement supplier (host).
18.3.3. (Added) Support Agreement Management. See AFI 25-201. Performance-based activities (contractor, MEO, and HPO) cannot negotiate and sign support agreements. The PMO shall negotiate, coordinate and control support agreements for supported workloads. MEOs and HPOs are authorized to negotiate, coordinate, and control support agreements pertinent to their functional area, but shall not without written approval of the government program management office.
18.3.4. (Added) Change Management for Performance-Based Activities (contract, MEO, and HPO). See FAR for contracts. The PMO is the OCR for issuing and identifying the need for contract modifications. The government program management office is the OPR for changing MEO and HPO management plans.
18.5.2.1. (Added) The PP implements the requirements of applicable guidance and this chapter.
18.5.4.1. (Added) Related documents include:
18.5.4.1.1. (Added) Intent or consideration to default or re-compete the contract prior to the scheduled recompetition.
18.5.4.1.2. (Added) Modifications to the contract involving changes to the statement of work or scope of work requirements. Ensure cost estimates are included.
18.5.4.1.3. (Added) Changes to the award fee plan.
18.5.4.1.4. (Added) Locally procured maintenance service contracts.

18.5.4.1.5. (Added) PWS/Statements of work (SOW) for all aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities maintenance/service contracts (includes transient alert contracts) covered in Added paragraph 18.
18.5.4.1.6. (Added) Contractor proposals to new or revised DOD, Air Force, MAJCOM, and local directives.
18.5.5. Coordinate waiver requests with the HQ AFMC/A4 staff through the appropriate chain of command when initiated by the contractor, MEO, or HPO.
18.5.7. Comply with all requirements.
18.5.11. PMO will determine procedures to nominate CORs for CLS/CFT contracts and all service contracts over SAT. The Chief COR shall make nominations/recommendations to the FC/FD but the FC/FD has the final decision.
18.5.15. Include performance status of contract activities in maintenance management meetings.
18.5.16 (Added) Ensure the appropriate functional reviews (i.e. Safety, Bioenvironmental, etc.) have been performed on the PWS/SOW prior to submission of the requirements package to contracting.
18.5.17. (Added) Pre-Contract Award and Pre-Planning for Management Plan Requirements. The requirements of this paragraph are applicable solely to the functional commander/functional director (FC/FD). These requirements shall be considered for incorporation into all solicitations, initial and follow-on (e.g., recompetitions), and MEO/HPO management plans containing maintenance functions. The guidance in this paragraph is authoritative, but not directive except where noted as mandatory because of Public Law, executive orders, DOD directives, or AFIs. Existing contracts need not change until recompetition of the function.
18.5.18. (Added) Contract / MEO / HPO Documentation.
18.5.18.1. (Added) Contract Format. The procuring contracting officer (PCO) is the OPR for contract preparation. The Uniform Contract format has 13 sections, alphabetized from A to M. The maintainer's primary concern will be with Section C, <i>Description/PWS/Specification/Statement of Work</i> , because this section details the service (outputs) the offeror is required to perform and the go/no-go checklist (services summary (SS)) for accepting the service (outputs). The FC/FD is the OPR for Section C and the SS.
18.5.18.2. (Added) MEO Format. See AFI 38-203.
18.5.18.3. (Added) HPO Format. Use same format as the MEO management plan, see AFI 38-203.

18.5.18.4. (Added) Solicitation, MEO, and HPO Provisions.
18.5.18.4.1. (Added) Applicability of AFIs and TOs. The Section C, PWS/SOW, requirements document and HPO management plan shall include AFI and TO requirements. TOs are mandatory and will be cited in their entirety. Cite mandatory AFI paragraph(s) or cut and paste text from the AFI into the Section C, PWS/SOW requirements document and HPO management plan. Contact MAJCOM/A4 staff and HQ USAF/A4LM, in turn, for assistance when there is disagreement over applicability and use of TOs or 21-Series AFIs.
18.5.18.4.2. (Added) Contractors performing operations covered by this instruction on or using government resources shall meet the intent of applicable portions of AFI 21-101. As a minimum the following programs will be addressed in the PWS/SOW: tool control, documentation, FOD prevention, and materiel control and equipment management. The attached template contains minimum requirements which should be considered for inclusion in PWS/SOW. It is important to consider the full scope of contracted operations as this attachment may not identify all necessary standards to be considered or may contain standards that are not part of the contracted operations.
18.5.18.4.3. (Added) Contract Data Requirements. The Section C, PWS/SOW requirements document and HPO management plan shall not require data deliverables except when required IAW an AFI or TO. Data deliverables created as a natural consequence of complying with AFIs or TOs shall not be cited in a contract data requirements list (CDRL) or contract line item number. For example, report data collected IAW an AFI or TO and documented on the appropriate AF Form/IMT or equivalent.
18.5.18.4.4. (Added) Support Agreements. The Section C technical exhibits and HPO management plan shall include workload requirements supported via support agreement (see AFI 25-201).
18.5.18.4.5. (Added) Organization. Contractors and MEOs are exempt IAW AFI 38-203 from organizing their operations as defined in AFI 38-101; however, the Section C PWS/SOW requirements document shall include a requirement mandating use of the AF standardized mailing address format (e.g., 412 CMS/MXMD) to facilitate uniform communication between organic and non-organic activities. HPOs opting not to comply with AFI 38-101 shall submit a waiver request through their MXG/CC, WG/CC, and MAJCOM/A1M/to HQ USAF/A1M.
18.5.18.5. (Added) Review documents related to default/re-compete prior to scheduled recompetition; contract Section C , PWS/SOW, requirements document or scope of work modifications; changes to award fee plan (if applicable); contractor, MEO, or HPO proposals to new or revised DoD, AF, MAJCOM, and local directives.
18.6.1.3 There will be Primary and Alternate COR for each contract.
18.6.1.4. The PMO and FC/FD shall determine fill requirements.

18.6.1.5. Chief COR has the authority to reject nomination but must notify FC/FD in writing the rejection justification and maintain on file.
18.6.1.10.1. (Added) Ensure development and maintain the PP and associated contract performance assessment documentation IAW ACO/PCO guidelines.
18.6.1.15.1. (Added) In coordination with the QACP develop a COR Training Program (Sign in Rosters for the training is maintained by the Chief COR) along with master training plan for CORs and individual training records with AF Form 797 to document technical training, evaluator training, and ancillary required training.
18.6.1.17. Assist the ACO/PCO and the Property Administrator in managing Government Furnished Equipment (GFE).
18.6.1.18. (Added) Serve on the MFT to ensure Section C PWS/SOW requirements documents and Performance Plan are properly developed utilizing the SMART Concept.
18.7.1.8. Report findings to PMO for coordination, through CO prior to forwarding to MAJCOM. (When applicable)
18.7.1.10.1. (Added) Serve as a member of the MFT when required.
18.7.1.11.1 (Added) COR will deliver schedule to Chief COR for review and distribution.
18.8.1.1. The program manager, Chief COR, COR will complete the AFMC developed COR training requirements. This training will be developed at a later date, and in the interim, the AETC Quality Assurance Evaluator Course may be attended on a space available basis.
18.8.2. CORs and Chief CORs must complete training IAW AFFARS MP 5301.602-2(d). HQ AFMC/A4US will develop a standard MAJCOM general COR training course at a later date. In the interim training IAW AFFARS MP 5301.602-2(d) will continue to be provided by the local QAPC. Additionally, it is highly recommended that CORs and Chief CORs complete the AETC Quality Assurance Evaluator Course. Completion of this course fulfills training requirement. COR Chiefs are also highly encouraged to complete the AETC Chief COR and Superintendent Course (until AFMC courses become available at a later date yet to be determined). Once AFMC Chief COR and FC/FD courses are developed and taught, these courses will become mandatory.
18.8.3. CORs, Chief CORs and FC/FDs must complete training IAW AFFARS MP 5301.602-2(d).
18.8.4.1. HQ AFMC/A4US will facilitate development of a standard MAJCOM initial and refresher general COR training courses at a later date.
18.8.9.1. (Added) HQ AFMC/A4US will facilitate development of a standard MAJCOM general COR training course at a later date. Completion of the AETC Functional Commander Executive Training Session is highly recommended for FC/FDs

18.11.3. Observation Area inspections will be accomplished at least annually and listed on the monthly schedule. Requirements will be coordinated/determined by the PMO.
18.14. Reports will be developed locally and submitted to MAJCOM for approval. Once MAJCOM reviews locally developed reports, MAJCOM will determine future content, format and routing.
18.15. If not specified in the contract, corrective action request (CAR) reporting forms will be determined by the PMO.
18.19.1. (Added) Also follow the FAR Part 37 with regards to Transition Plans.
Chapter 19 (Added) - TECHNICAL DATA AND WORK CONTROL DOCUMENT (WCD)
19.1. (Added) Introduction. This supplement provides policy and procedures for depot work planning and the use of technical data in compliance with Air Force policy. This document also provides guidance for processing, handling, and storage of WCDs. This document supersedes all other guidance pertaining to WCDs if a conflict exists.
19.1.1. (Added) General.
19.1.1.1. (Added) Only current and verified Technical Data, as authorized by TO 00-5-1, shall be used for depot maintenance. Local procedures shall be developed to control other forms of technical data when extracts are made (i.e. engineering drawings/mylars, D-2 drawings, Process Specifications, commercial maintenance manuals [CMM], commercial off the shelf [COTs], etc.). These policies/procedures shall be approved by the MXW. In the absence of written policy, a locally printed TO extract may only be used on the day it is printed. Locally printed Technical Order extracts may be used for thirty calendar days if the maintenance wing has a written policy.
19.1.1.2. (Added) Use of unapproved technical data (such as notes, manuals, drawings, emails, etc.) including uncontrolled copies (or pages) of formal TOs is prohibited.
19.1.1.3. (Added) Specific TOs take precedence over general TOs. When specific TOs do not contain procedures or processes, such as cleaning, plating, etc., general TOs containing this information will be used. If there is a difference in requirements between these documents, the more stringent requirement applies.
19.1.1.4. (Added) The current version of TOs shall always be used. For all dual based TOs (hard copy and electronic distribution) the units shall consider the “medium of primary use” at the point of maintenance (POM) as the current version. For aircraft in storage at AMARG, use technical data prescribed by the requesting authority.

19.1.1.5. (Added) WCD Focal Point. Each ALC MXW, or equivalent, designates the WCD Focal Point. This individual is the Office of Primary Responsibility (OPR) for WCD program directives and assists all production groups with WCD program requirements.
19.1.1.6. (Added) When a Depot MXW production area is required to perform maintenance using a TO identified as "preliminary" the System Program Manager/Supply Chain Manager (PM/SCM) Chief Engineer shall authorize the use of the "preliminary" TO(s) IAW AFI 63-101, <i>Acquisition and Sustainment Life Cycle Management</i> , and TO 00-5-3, <i>AF Technical Order Life Cycle Management</i> .
19.1.1.6.1. (Added) Engineering red-line changes to technical data already in sustainment shall have an AFMC Form 202, <i>Nonconforming Technical Assistance Request and Reply</i> , and/or SH252 initiated authorizing the use of the 'red-line' TO. For contractor engineering red-line changes to contractor CMMs (Commercial Maintenance Manuals) when the Air Force is performing as a partner under a CLS agreement, a letter from the contractor engineer shall be required authorizing the use of the red-line changes to a contractor developed and distributed CMM.
19.2. (Added) Technical Data.
19.2.1. (Added) Work specifications, such as statement of work (SOW), etc. are <u>not</u> an authorized source of technical data.
19.2.2. (Added) Contractor Technical Data. Contractor supplied technical data may be used when the depot maintenance organization is acting as a sub-contractor in accordance with TO 00-5-1. Depot maintenance personnel shall use contractor data when CLS/Contractor Support (CS) contracts provide for Air Force assistance to the contractor or when operating or maintaining equipment at sites or locations not covered by the contract. The contractor's provided data and source data as defined in TO 00-5-3, <i>AF Technical Order Life Cycle Management</i> are authorized for use provided the cognizant engineering authority has approved their use and the production planning team has concurred the data is valid for performing the work required. Referencing of this type of data on WCDs is considered valid proof of authorization for use. The cognizant engineer, or SPO engineer shall ensure currency of contractor tech data. Local procedures shall be developed to determine the disposition of contractor's technical data after the contract has ended.
19.2.3. (Added) Technical Data Availability. O&M technical data procedures for operation, troubleshooting, repairing, removing, installing, manufacturing, calibrating, or servicing action must be available and used at the job site as prescribed by TO 00-5-1. General TOs and Methods and Procedures TOs (MPTOs) need not be at the job site except when there is contractor support. All MPTOs listed in the SOW and directive upon the contractor must be readily available at the job site.
19.2.3.1. (Added) Used at the job site. Technical data shall be in the area where the work is being performed (i.e., work bench, aircraft stall, dock, machine shop, etc.). Job site is determined by the nature of the task.

<p>19.2.4. (Added) TO Changes and Authorized Deviations. Technical data used in depot maintenance must be complete, accurate, effective, and efficient. It is the responsibility of maintenance personnel at all levels (including SPO personnel) to ensure deficiencies are reported in a timely manner and improvements made when authorized. When work cannot be performed using the TO as written, an authorized deviation must be processed and approved. The AFTO Form 22, <i>Technical Manual (TM) Change Recommendation and Reply</i>, is processed in accordance with TO 00-5-1 or the AFMC Form 202, <i>Nonconforming Technical Assistance Request and Reply</i>, is sent to the appropriate engineering/ planning function which processes the request in accordance with AFMCMAN 21-1, <i>Air Force Materiel Command Technical Order System Procedures</i>.</p>
<p>19.2.4.1. (Added) AFTO Form 22. This Form provides the mechanism by which improvements and corrections to TO deficiencies may be made. TO 00-5-1 provides detailed instructions on the routing of TO deficiency submissions. It is the responsibility of the individual discovering a TO deficiency to initiate an AFTO Form 22.</p>
<p>19.2.4.2. (Added) AFMC Form 202, <i>Nonconforming Technical Assistance Request and Reply</i>. Use the AFMC Form 202, <i>Nonconforming Technical Assistance Request and Reply</i>, to furnish technical data for (a) conditions or procedures beyond published authority under work stoppage and non-work stoppage conditions, and (b) when technical data does not exist and must be developed, approved, and provided to maintenance technicians. Use procedures in accordance with AFMCMAN 21-1, <i>Air Force Materiel Command Technical Order System Procedures</i>, for the preparation, use, and control of AFMC Form 202, <i>Nonconforming Technical Assistance Request and Reply</i>.</p>
<p>19.2.4.3. (Added) AFTO IMT 252, <i>T.O. Publication Change Request</i>. An approved AFTO IMT 252, <i>Technical Order Publication Change Request</i>, may be issued as a result of an approved AFMC Form 202, <i>Nonconforming Technical Assistance Request and Reply</i>, when a TO change is required to provide the correct or newly developed data necessary to resolve an actual or anticipated work stoppage. The completed AFTO IMT 252 is stamped Special Handling (SH252) and is processed and inserted into the TO as detailed in AFMCMAN 21-1, <i>Air Force Materiel Command Technical Order System Procedures</i>, and is used until replaced by the formal TO update.</p>
<p>19.2.4.4. (Added) AF IMT 3925, <i>Engineering Order (EO)</i>. An EO is used to document changes to engineering drawings as described in AFI 21-402, <i>Engineering Drawing System</i>, and AFMCMAN 21-1.</p>
<p>19.2.5. (Added) Posting TO Changes. Changes to TOs must be monitored and documented, ensuring no process is compromised. The organization responsible for posting changes to TOs will publish and provide a list of changes to the appropriate engineering organization, production supervisor, and planning organization. Changes to TOs may require changes to the WCDs and Process Orders. The planning, production, and engineering organizations are jointly responsible for reviewing the TO changes and the determination of WCD impacts. Changes to WCDs and Process Orders shall be accomplished within fifteen working days after formal posting of the TO</p>

change.
19.2.6. (Added) Work Control Document (WCD). WCDs are not technical data. The WCD is an official and authorized document with the technical data reference. No work will be performed without an approved WCD. The WCD is the official record for work including control, identification, inspection, and routing of items. A WCD shall be developed for all programmed and temporary workloads. This ensures there is a complete audit trail of work performed. ALC MXWs performing host tenant support workloads including preventive maintenance type support workloads not included in the FEMS can develop procedures for documenting maintenance actions accomplished by certified MXW technicians. WCDs shall be auditable and meet the requirements of this instruction. The level of auditability may be determined by locally developed procedures. The amount of detail and technical data references on WCDs is determined by the Pre-Production/Production Planning Team (PPPT) and is dependent on the type of work, complexity of work, and repetitiveness of the work assigned. Unpredictable WCD's that are developed and processed thru the MWR system do not require PPT review unless requested.
19.2.6.1. (Added) If there are conflicts between the WCD and the technical data, the technical data shall prevail.
19.2.6.2. (Added) WCD review will be performed IAW local supplement.
19.2.6.3. (Added) As determined by the Production Planning Team (PPT) when IAW is used on the WCD, the technical data must be open and in use. Depending on the nature of the task being performed, when approached the technician will have correct and approved technical data open to the applicable area in work. The performing technician will be able to point to the task being accomplished in the technical data but need not be on the exact page. Critical tasks/operations identified by the PPT will be IAW tasks/operations.
19.2.6.4. (Added) All Warnings, Cautions, and Notes will be reviewed prior to performing the task or at the beginning of each shift. Review Verification Status Pages (VSP), when present, to check the verification status before attempting to use any procedure per TO 00-5-3.
19.2.6.8. (Added) Any technical data referenced by the PPT shall be complete and directly related to the work being accomplished. The PPT determines the WCD technical data references and it may include paragraphs, tasks, and steps needed to perform the work; however, paragraphs, tasks and steps are not required. The WCD is the official record that certified technicians required by the PAC Programs performed the task(s) using authorized technical data. WCDs will contain the complete technical data alpha numeric designated number when used. Technical data abbreviations are not authorized.
19.2.6.9. (Added) When the primary technical data applies to every operation of the repair process it is not necessary to repeat the technical data reference for each sub-operation. Other technical data referenced in the primary technical data are not required to be listed on the operation line. Operations that require the use of independent technical data shall be referenced in the operation description block. Any operation not listing independent technical data reverts

to the primary technical data.
19.2.7. (Added) WCD Change Request.
19.2.7.1. (Added) AFMC Form 957, <i>Work Control Document (WCD) Change Request</i> , is prescribed to identify additions, deletions, and corrections to an existing WCD. It may also be used to recommend action be taken to create a new WCD. MXWs shall develop local procedures on tracking WCD changes when AFMC Form 957 is not used.
19.2.7.1.1. (Added) The person identifying the need for a change on the WCD will initiate the request to Planning by completing AFMC Form 957, Part 1. For administrative changes (i.e. typos, spelling, grammar, etc.), this process is not required.
19.2.7.1.2. (Added) The signature and organization symbol of the initiator's supervisor is required. When changes to a Resource Control Center (RCC) are required, both the old RCC and new RCC supervisor's signatures will be required.
19.2.7.1.3. (Added) The supervisor will forward the request to the appropriate planning organization.
19.2.7.1.4. (Added) The responsible Planner/IET will complete the following actions within 15 working days:
19.2.7.1.4.1. (Added) Complete Part II of the request indicating the request was accepted, or explain why the request was not accomplished.
19.2.7.1.4.2. (Added) Input changes to the WCD as required.
19.2.7.1.4.3. (Added) Return a copy of the completed request to the supervisor.
19.2.7.1.4.4. (Added) Maintain AFMC Form 957 electronically or in planning jacket for a minimum of two years.
19.2.8. (Added) Pre-Production Planning, New Workload. For each new programmed/negotiated workload, the MXW/CC requires establishment of PPPT composed of Planning Element Chief or designee, Wing Business Office, Cognizant Engineer (OSS&E authority), applicable MXW Engineering, RCC Production Supervisor(s) or designee(s), QA Specialist (COR) and other representatives (i.e. DLA, material support specialist, safety, bioenvironmental, Nuclear Weapons Resource Officer (NWRO), scheduling, training, PAC manager, etc.) as required. See Logistics Requirement Determination Process (LRDP) website. www.gao.gov/archive/1996/ns96070 .
19.2.8.1. (Added) The cognizant engineer or designee will chair the PPPT. Pre-production personnel are responsible for the initial resource development and identification of critical end items for exchangeables and brochure required critical tasks for aircraft, workplace facility

layouts, process flow charts, bill of material requirements, work breakdown structure and associated WCDs, labor standard operations, identification of training and certification requirements for production personnel, review of all hardware and software technical data, review of all associated equipment and hand tools, review of all special processes, finalization of direct cost, reporting of shortfalls that prohibit organic start and requesting work authorization documents for programmed/negotiated workload start.

(Added) NOTE: It is important that the planning committee members have a thorough working knowledge of the maintenance industrial repair/overhaul process. In addition, a thorough understanding of all maintenance organizations and their responsibility to each other is required.

19.2.8.2. **(Added)** For organizations operating under the Maintenance Requirements Supportability Process (MRSP), the strategic team created will fulfill the requirement for PPPT.

19.2.9. **(Added)** Production Planning Team (PPT).

19.2.9.1. **(Added)** The PPT purpose is to further develop, plan and refine workload requirements as they pertain to WCDs. The team is composed of a Planner/IET and the RCC Production Supervisor or designee. When requested, the Production Controller/Scheduler, QA, and appropriate Engineer will attend PPT meetings.

19.2.9.2. **(Added)** All formal PPTs will use AFMC Form 500, *Work Control Document Production Planning Team Checklist*, when developing or reviewing WCDs. The responsible planning organization will maintain the completed form(s) electronically or a completed hard copy form(s). The Planner will maintain the completed AFMC Form 500 as part of the permanent record. The AFMC Form 500 will serve as PPT meeting minutes. The AFMC Form 500 is the final and official record of the PPT and issues/concerns about the developed WCD shall be identified as a possible recommendation for review by members who originally signed the form. Attach any required documentation to AFMC Form 500 as needed that supports the PPT. A round table is not required for formal coordination.

19.2.9.2.1. **(Added)** The AFMC Form 500, *Work Control Document Production Planning Team Checklist*, will be used to document review of Contractor supplied WCDs. A round table is not required for coordination. Completing AFMC Form 500 electronically is encouraged. The form is available at the following link: <http://www.e-publishing.af.mil/shared/media/epubs/AFMC500.xfdl>. Instructions for completing AFMC Form 500 are provided in **Table A14.8**.

19.2.10. **(Added)** Types of WCDs. The following are the only authorized types of WCDs for production maintenance. Deviations are NOT authorized without prior HQ AFMC/A4D written approval. WCDs comparable to Inventory Tracking System (ITS) and AFMC Form 959, *Work Control Document*, AFMC Form 173, *MDS/Project Operation Assignment*, shall comply with the requirements of this instruction.

19.2.10.1. **(Added)** AFMC Form 959, *Work Control Document*. Inventory Tracking System (ITS) (G337), IMPRESA, Networks MTO, Maximo (G029), AFMC Form 173, *MDS/Project*

<p><i>Operation Assignment</i>, or Programmed Depot Maintenance Scheduling System (PDMSS) (G097), and Management Planning and Control System (MPCS) formally known as D012 are used for workloads processed through production maintenance. These forms will not be used for the repair and certification of TMDE work. The WCD will be attached to the item throughout the production process, or will be placed in a designated location, for those items where attachment is not practical. (See Table A14.4. – Instructions for AFMC Form 959.) (See Table A14.5. – Instructions for AFMC Form 173.)</p>
<p>19.2.10.2. (Added) Sequential Tasks. Tasks are accomplished and certified in step-by-step sequences; however, deviation is permissible based on the nature of the task. The deviation will not create a conflict with the technical data source and integrity of the task accomplishment will not be compromised. Any task determined by the PPT as requiring sequential steps shall have the following (or equivalent) statement on the WCD or definitized list: “Tasks must be accomplished and certified in step-by-step order”.</p>
<p>19.2.10.3. (Added) All unpredictable AFMC Forms 173 will be processed through Maintenance Work request (MWR) for approval.</p>
<p>19.2.10.3.1. (Added) A Work Emergency is defined as a situation when MWR/PAO are not available where accomplishment avoids work stoppage or delays of aircraft flow time. MRT/Planner approval must occur the first business day, following this condition, to formally meet, approve, and comply with coordination requirements on the WCD. The Aircraft Logistics Specialist (ALS) or designee and production foreman will make this determination. Local publications shall be developed to ensure the work emergency WCD is documented and controlled.</p>
<p>19.2.10.3.2. (Added) Definitized List. Use G097 at the URL site: https://afkm.wpafb.af.mil/ASPs/CoP/OpenCoP.asp?Filter=MC-LG-00-31 and in the DM-SUM-A007-020, <i>Software User's Manual</i>, for information to complete definitized lists. A definitized list supplements AFMC Form 173 and shall be attached to and become a permanent part of the AFMC Form 173 throughout the production process. Definitized lists must be updated and the task description must be in agreement with the source AFMC Form 173. It provides a detailed step-by-step breakdown of the process. AFMC Form 959/ITS/D012 may be used as a definitized list for AFMC Forms 173.</p>
<p>19.2.10.3.3. (Added) The AFMC Form 173 will be assigned an inspection code applicable to the work being accomplished, as determined by the PPT. AFMC 173 header cards for definitive guides containing multiple skills will be coded as administrative. The person stamping the source 173 is certifying that the tasks/operations on the definitized list are stamped and dated. If the PPT determines that the header card is an administrative task/operation, the scheduler will certify that all certification blocks on the definitized guide have been stamped and dated by “C” stamping the WCD.</p>
<p>19.2.11. (Added) Electronic WCDs. HQ AFMC approved computer systems generated WCDs without hard copies are authorized and encouraged as long as the accuracy and integrity of the documents can be maintained and the minimum documentation is accomplished as required by</p>

this and other applicable instructions. Automated Data Processing Systems (ADPS) that have the capability, electronic completion, and certification of WCDs shall include PAC and supervisory certifications. These systems must have sufficient built-in safeguards (PINS, electronic signatures, passwords, firewalls, etc.) to ensure system integrity and security are maintained and that a reliable audit trail is maintained. The records shall be maintained in accordance with Air Force Records Information Management Systems (AFRIMS) at

https://w.w.w.my.af.mil/afirms/afirms/afirms/rds/rds_series.cfm.

19.2.12. **(Added)** Contractor Supplied WCDs. Contractor supplied/distributed WCDs used by Air Force personnel shall be utilized IAW this instruction. Local supplements may be developed to address unique contractor WCD requirements such as form number, design, format, etc.

19.2.12.1. **(Added)** PPT Review of Contractor's WCDs. The PPT review of contractor WCDs shall consist of the Planner, applicable Production RCC, Controller/Scheduler, and designated workload QAR. Additional representation from the following organizations should be considered wherever a contractor's WCD is reviewed: Safety, Bio-environmental, and the contractor. The PPT review shall ensure technical data is identified and available, applicable critical tasks/operations are identified, and personnel have the required skills to perform the maintenance task.

19.2.13. **(Added)** Level of Effort and other Non-MISTR (Management of Items Subject to Repair)/Non-PDM (Programmed Depot Maintenance) Workloads. The AFMC Form 959 may be used when no end item product is produced and no other WCD process is feasible. Local procedures may be developed on how this form will be used and filled out for these specific requirements.

19.2.14. **(Added)** Technical Information on WCDs.

19.2.14.1. **(Added)** Technical Data Usage Requirement. All WCDs requiring PAC certification (M, I, E, and N Coded) must contain the technical data reference applicable to the work being performed.

19.2.14.1.1. **(Added)** General maintenance tasks/operations not covered by technical data and performed by mechanics shall require the statement "Technical Data Not Required", or equivalent, on WCDs.

19.2.14.1.1. **(Added)** Technical data, called out on the WCD, may reference additional TOs or drawings necessary to accomplish task. Due to space constraints on AFMC Form 173, the primary TOs may be the only ones referenced on the WCD. When the primary tech data applies to every sub-operation of the repair process it is not necessary to repeat the tech data reference for each sub-operation. Other tech data referenced in the primary tech data are not required to be listed on the sub-operation line. Sub-operations that require the use of independent tech data shall be referenced in the sub-operation description block. Any sub-operation not listing independent tech data reverts back to the primary tech data.

(Added) NOTE: The term "Technical Data" shall not be interpreted to mean the same as the

term “TOs.” (See Glossary of References and Supporting Information.)
19.2.14.1.2. (Added) Specifications and Tolerances on WCDs. Including specifications, tolerances, and any similar information verbatim from the governing technical data into any WCD will be held to an absolute minimum. The intent must not be to enable using WCDs in lieu of the official technical data. Justification for inclusion of this type of data on WCDs is based on a significant gain in efficiency and/or productivity, or a clear reduction in the chance of using the wrong specifications or tolerances or avoids possible misinterpretation or miscalculations of these values. Specifications/tolerances are not to be confused with MIL Specifications, stock numbers or part numbers.
19.2.14.1.2.1. (Added) WCD operations determined critical by the PPT or identified as IAW shall not have any specification, tolerance, or other similar information identified within the task description block
19.2.14.1.2.2. (Added) The responsible Planning Element shall maintain a control log of all WCDs containing specifications and tolerances. At a minimum this log will identify the WCD control number and date of last PPT review, technical data number, basic date, the change date and change number. If the technical data changes the WCD shall subsequently be changed.
19.2.14.1.2.3. (Added) The planner shall manually update all changes to WCDs on the production floor and annotate the following (or equivalent) statement in RED at the top of the WCD header page “NOTE: WCD specification updated due to a technical data change.”
19.2.14.1.2.4. (Added) The planner shall notify the production organization identifying the applicable WCD was updated because of a recent technical data change.
19.2.14.1.2.5. (Added) Engineering, planning, and production are responsible for reviewing technical data changes and determining the impact to WCDs containing specification and tolerances.
19.2.15. (Added) Data Collection on WCDs. Provisions will be made to annotate measurements, laboratory/test results, entries on AFTO Form 95, <i>Significant Historical Data</i> , time changes and calendar inspection items complied with, on the WCD or attached data sheet when such annotation is required IAW TO 00-20-1, <i>Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures</i> . Requirements can be generated by technical data, the PPT, work specifications, quality plans, or when a precise audit trail is needed. Data sheets used to annotate measurements or laboratory/test results will be attached to the WCDs.
19.2.16. (Added) Inspection/Certification Codes. These are codes utilized for determining the type of Inspection/Certification required on a WCD. The only authorized Inspection/Certification Codes are listed in Table A14.7 .
19.2.16.1. (Added) A maintenance stamp is mandatory and shall be used to indicate work

completion and certification. Use of initials and employee numbers are not permitted.
19.2.16.2. (Added) Critical Task/Operation Identification. Maintenance performed by AFMC personnel will be reviewed to identify critical maintenance tasks/operations. Critical tasks/operations designated for secondary PAC certification must be listed and stamped as separate line items. The PPT identifies critical tasks/operations as any task/operation that affect form, fit and function, and has an inspection/certification identified by the cognizant engineering authority, and production planning team. If not done correctly, can result in one of the following conditions:
19.2.16.2.1. (Added) A catastrophic failure of an end item.
19.2.16.2.2. (Added) An end item failure that may affect safety of flight.
19.2.16.2.3. (Added) Where end item failure may present an imminent safety/health hazard or affect a life support system.
19.2.16.2.4. (Added) Any failure of a critical safety item (CSI).
19.2.16.2.5. (Added) Any item containing TO direction for addition or removal of software (CPIN loading or removal) which if not performed would compromise functionality and/or foreign or national security.
19.2.16.3. (Added) Secondary Certification. Secondary certification (second set of eyes) is required for all critical tasks/operations. They can also be used as a designated inspection tool to help control problem/high dollar tasks, provide measurement, FO/closing inspections, QDRs, and improve processes. Secondary certification shall be accomplished on the applicable WCD task/operation using either an “E” or “I” PAC certification codes identified in Table A14.7 . The “I” secondary PAC inspection code is not to be restricted to IPI that is mandated by MAJCOM, TO, or local management directives, but will be used when technical data conformance cannot be verified after task/ operation completion. Where secondary certification is required for tasks that are visual in nature such as FOD inspections the technician performing the secondary certification must also perform the task . The following can be considered when identifying secondary certification:
19.2.16.3.1. (Added) Cautions and warnings which may have associated task/operation that is critical in nature.
19.2.16.3.2. (Added) Other items in the technical data that meet the criticality criteria.
19.2.16.3.3. (Added) Mishaps and other safety reports/alerts, and investigations involving the workload that identify critical areas.
19.2.16.3.4. (Added) Previously identified problem areas from similar workloads.
19.2.16.3.5. (Added) Deficiency reports, especially category one, and other customer feedback.

<p>(Added) NOTE: There are some SSQ tasks that by their very nature do not allow secondary certification. In addition, there are those where it is impossible to inspect or witness the accomplishment of the task. Mandatory SSQ task/operation except those that are non-critical must be considered when identifying these requirements along with any other sources that are available for specific workloads.</p>
<p>19.2.16.4. (Added) Production closures of end items that will be installed on aircraft, aircraft closures, non-enclosed areas where safety of flight could be compromised and major component mating operations. A WCD task/operation or definitized list for performing a Rag/FO inspection will be used. Include the statement “Rag/FO inspection C/W” on the WCD. Production closure of end items that require closing/rag/FO inspections do not require a separate WCD or definitized list. Centers may use an equivalent Rag/FO inspection statement on the WCDs and definitized list. If technical data or TO provides guidance, a separate Rag/FO inspection task/operation is not required. The technical data or TO will be annotated as IAW on WCD. Area will be immediately temporarily/permanently secured following the closing/ installation inspection.</p>
<p>19.2.16.5. (Added) After the initial work planning process is complete, the first level supervisor or higher has the primary responsibility for identifying additional operations for secondary certification requirements. The Planner/IET must work closely with the responsible supervisor to ensure all critical items identified in the technical data are included. Changes in workload requirements and technical data must be carefully screened for tasks/operations that meet the criticality criteria.</p>
<p>19.2.16.6. (Added) Multi-task/Operation, Task/Operation and Team Task/Operation Certification. Local procedures must be developed to document work accomplishment for tasks that are accomplished by several individuals and/or for all work accomplished by more than one person due to shift change. When possible, the same individual or crew should perform multi-task/operation work to maintain continuity. For multi-task/operation, task/operation, and team task/operation certifications, the person performing the last task/operation must certify on the WCD that the portion they performed was done correctly and verifies all previous tasks/operations have been stamped. Every effort will be made to document who performed specific portions of the tasks/operations so that accountability can be maintained.</p>
<p>19.2.16.7. (Added) Changing Inspection/Certification Codes. Inspection/Certification codes can only be changed, in-work, by the following functions:</p>
<p>19.2.16.7.1. (Added) Production supervisor can perform a one-time upgrade to an inspection/certification code if a secondary certification is desired. The production supervisor will also affix a “P” stamp and date above the inspection block or locally identified area.</p>
<p>19.2.16.7.2. (Added) A COR can add a Q code above block 29 of the AFMC Form 173 or in the “Other/Insp” (third column) of the definitized list. On the AFMC Form 959 the COR can add a Q in block 20, third column identified with a “Q” and on an ITS equivalent WCD, the COR will add a Q to the right of the current certification code block. All Q entries will be done in Red.</p>

The COR will affix a stamp and date next to the manually entered Q code on the applicable WCD. Only COR is authorized to downgrade a Q code.
19.2.16.7.3. (Added) The Planner and Production Supervisor as the PPT must make any downgrades to an inspection/certification code unless the operation is critical or coded Q. This change will be done in Red and the Planner and Production Supervisor will affix their stamps and date above the code or locally identified area. Justification for the change will be annotated on or attached to the WCD. To downgrade critical operations the PPT must review and coordinate on the AFMC Form 500, <i>Work Control Document Production Planning Team Checklist</i> .
19.2.17. (Added) Local procedures will be developed for hand written tasks/operations added to WCDs on shop floor.
19.2.18. (Added) FCF and Maintenance Operational Checks (MOC) Documentation will be IAW TOs 00-20-1, <i>Aerospace Equipment Maintenance General Policy and Procedures</i> , and 1-1-300, <i>Acceptance/Functional Check Flight and Maintenance OPR Checks</i> .
19.2.19. (Added) Rework. Collection and analysis of rework data is essential to promoting efficient and effective processes. Rework is any work that is being re-accomplished to repair or replace failed material or end items, or to correct a work discrepancy, where the discrepancy is the direct result of incorrect workmanship; after the acceptability or completion of the work task/operation, or end item has been stamped on the WCD by production personnel. Also reference AFMCI 21-156, <i>Operational Workloading, Planning and Scheduling Control</i> .
19.2.19.1. (Added) Documentation of Rework. (AMARG will develop local procedures to comply with rework documentation.) The WCD is flagged with one RED diagonal line drawn through the inspection certification block of the specific WCD operation where the workmanship defect or deficiency exists. The WCD is stamped and dated in the inspection certification block. When it is necessary to rework an item, the item and the accompanying WCD retreat to the first step requiring re-accomplishment, then the normal sequence is followed to completion.
19.2.19.2. (Added) A rework WCD is generated that includes all operations/tasks that must be re-accomplished and is attached to the original WCD. All rework operations/tasks are re-accomplished, stamped, and dated. Production count is not taken for rework.
19.2.19.3. (Added) All WCDs used for rework will contain the header information of the original WCD. WCDs will be annotated REWORK on the header of the WCD in Red. Electronically generated rework WCDs do not require REWORK in red.
19.2.20. (Added) Routed Items. (AMARG will develop local procedures to comply with routed items.) Routing may be classified as either job routing or process routing. Routing may involve multiple RCCs, or may occur within a single shop.
19.2.20.1. (Added) Job Routing. AFMC Forms 127, <i>Routed Order</i> , and AFMC Forms 137, <i>Routed Order (PROJ DIR)</i> . AFMC Forms 127/137 or automated system produced equivalent

shall be used when designated by the PPT to furnish routing and data to/from aircraft and support shops. When items are aircraft specific, the MDS and complete aircraft serial number (e.g. C130J 86-0092) shall be included along with the item control number, part number and item serial number. AFMC Forms 127/137 are not to be used in lieu of a WCD. If the routed item work to be accomplished requires the performance of a maintenance task, an approved WCD will be developed or provided to the mechanic/technician for performance and certification of the maintenance task identified. Items routed between organizations using Routed Order documents require the tasked organizations to develop a WCD in compliance with this instruction. Retention of AFMC Forms 127/137 is not required as a depot historical record for aircraft or support shops since all work performed will be documented and certified on approved WCDs.

19.2.20.2. **(Added)** Process Routing. Process routing, which consists of forwarding an item to a process shop, is an integral part of the overall repair effort, but isn't considered a job route. A process shop is defined as a depot maintenance function that provides conditioning support on component assemblies and materials, or essential support services for end items being repaired by other depot maintenance organizations. The following are examples of candidates for process routing: cleaning, plating, heat treat, welding, battery servicing, grinding, machining, NDI, check/test, and minor maintenance.

19.2.20.3. **(Added)** Local procedures can be developed for back shop/commodities related routed items as required.

19.2.21. **(Added)** Non-programmed work. Non-programmed work is work authorized by AFMC Form 206, *Temporary Work Request*. AFMC Form 206 requiring maintenance shall have an approved WCD. The G004L-L3A will not be used as the WCD.

19.2.22. **(Added)** Deficiency Report Data. Deficiency data reported IAW TO 00-35D-54, *USAF Deficiency Reporting and Investigating System*, (to include aircraft/engine acceptance discrepancies), must be analyzed by the Production Group QA Office. Technical data and WCD problems contributing to reported defects must be corrected. Changes to these documents must be formally requested and tracked to ensure effectiveness as part of the corrective actions, as appropriate. The QA program must provide feedback to managers and supervisors.

19.2.23. **(Added)** Condemned Parts WCD Documentation. When a part is condemned the technician condemning the part will stamp and date the appropriate WCD certification block, and enter in the specific task/operation description block the word "condemned", and include the word "condemned" on the first page of the WCD. No technician documentation is required for operations that will not be completed due to parts condemned.

19.3. **(Added)** Roles and Responsibilities.

19.3.1. **(Added)** Depot Field Team (DFT) Activities. See TO 00-20-1, *Aerospace Equipment Maintenance General Policy and Procedures*, and AFMCI 21-120, *Organic Depot Field Teams*.

19.3.2. (Added) PPT. The PPT WCD and technical data responsibilities are as follows:
19.3.2.1. (Added) Assist in the development of the WCD for programmed workloads.
19.3.2.2. (Added) Provide and receive input between Groups for routed items.
19.3.2.3. (Added) Review inspection/certification codes, technical data and safety requirements.
19.3.2.4. (Added) Identify in the WCD any task as determined by the Chief Engineer of a weapon system or lead engineer of an end item, as critical, using the definition of a CSI as guidance. A CSI is defined as a part, an assembly, installation equipment, launch equipment, recovery equipment, or support equipment for an aircraft or aviation weapon system if the part, assembly, or equipment contains a characteristic where any failure, malfunction, or absence of which could cause a catastrophic or critical failure resulting in the loss or serious damage to the aircraft or weapon system, an unacceptable risk of personal injury or loss of life, or an uncommanded engine shutdown that jeopardizes safety. CSIs include items determined to be "life limited", "fracture critical", "fatigue sensitive", etc. Damage is considered serious or substantial when it would be sufficient to cause a "Class A" accident or a mishap of severity category I. The determining factor in CSIs is the consequence of failure, not the probability that the failure or consequence would occur. Items formerly identified as "flight safety part", "flight critical part", "flight safety critical aircraft part", or "safety of flight item" are considered CSIs.
19.3.2.5. (Added) Identify tool, equipment, ground handling, and mockup requirements, as required. Review all applicable technical data and determine the availability and adequacy of the above items.
19.3.3. (Added) Planner:
19.3.3.1. (Added) Planners/Industrial Engineering Technicians (IET) develops WCDs from approved technical data. This instruction or other directives do not authorize use of unapproved or uncontrolled technical data of any kind. The procedures in this instruction will be carefully followed and supported to ensure products and services meet all technical requirements.
19.3.3.2. (Added) Ensures all Maintenance Work Requests (MWRs) are processed through the MWR system process..
19.3.3.3. (Added) Serves as chairperson of the PPT.
19.3.3.4. (Added) Ensure development, preparation, revision, and review of WCDs and definitized lists; and the accuracy of their technical contents. When informed of technical data changes, ensures WCDs are reviewed and updated as required.
19.3.3.5. (Added) Notifies the scheduling function and production supervisor when revisions are made to WCDs that directly impact the form, fit or function of the operation process.
19.3.3.6. (Added) Performs a review and update of WCDs when work scope, technical data, or

engineering changes are processed with the applicable PPT members to ensure they contain all steps necessary for tasks/operations performed by the mechanics. The Planner will review affected WCDs to ensure accuracy and currency. Review of WCDs will include confirmation of the availability of complete and accurate technical data, the work process complies with all applicable requirements, and validity of inspection codes. This review will be documented with AFMC Form 500.
19.3.3.7. (Added) Maintains an electronic or hard copy file of all WCD Change Requests (AFMC Form 957) for a minimum of two years.
19.3.3.8. (Added) Will be able to access applicable AFMC IMT 561 either electronically or hard copy.
19.3.3.9. (Added) Participates in the AFMC Form 202 process and maintains documentation, electronically or hard copy, as required by AFMCMAN 21-1.
19.3.3.10. (Added) Maintains and stores the latest (electronic or hardcopy) WCD/Work Package.
19.3.3.11. (Added) Electronic Reviews. Reviews without hard copies are authorized and encouraged as long as the accuracy and integrity of the documents can be maintained and the minimum documentation is accomplished as required by this and other applicable instructions. This process must have sufficient built-in safeguards (PINS, electronic signatures, passwords, firewalls, etc.) to ensure system integrity and security are maintained and that a reliable audit trail is maintained. The records must be maintained as prescribed in Records Information Management Systems at https://webrims.amc.af.mil .
19.3.4. Production Supervisor shall ensure:
19.3.4.1. (Added) Subordinates are familiar with the directives governing their duty assignments.
19.3.4.2. (Added) The most recent authorized technical data is used.
19.3.4.3. (Added) Personnel are advised of any significant changes in new, revised or changed technical data.
19.3.4.4. (Added) Emphasis is placed on all changes that are critical or safety related (e.g., cautions/warnings).
19.3.4.5. (Added) New, revised or changed technical data is reviewed to determine if it affects the qualifications/certifications of personnel and the entries on the WCDs or definitized lists.
19.3.4.6. (Added) If these areas are impacted, steps are taken to bring both personnel and WCDs into conformance with the new requirements. The supervisor shall notify the training and

planning organization of any significant changes.
19.3.4.7. (Added) Attendance at the PPT meeting.
19.3.4.8. (Added) Assistance in the development of WCDs as needed.
19.3.4.9. (Added) Review of the WCD/Work Package documentation for confirmation of inspection and certification codes, IAW requirements and critical tasks/operations.
19.3.4.10. (Added) Identification, review PAC tasks and secondary certification requirements on the WCD for accuracy.
19.3.4.11. (Added) Review of new, revised, or changed publications. Provide recommendations to the planning team concerning revisions to WCDs.
19.3.4.12. (Added) Availability of required technical data in the work center.
19.3.4.13. (Added) Review of completed WCDs for accuracy and completeness. Ensure all rework documentation is attached if applicable. Ensure completed WCDs and all required supporting documentation are available to the Production Controller/Scheduler.
19.3.4.14. (Added) In conjunction with the Production Controller, prepare routing documents when none are preprinted.
19.3.4.15. (Added) Notification of QA prior to accomplishing tasks/operations requiring "Q" stamp.
19.3.5. (Added) Maintenance Technician/Mechanic shall:
19.3.5.1. (Added) Certify completion of a PAC inspection/certification coded task by stamping and dating the WCD. When a task/operation listed on a WCD is not or will not be accomplished, an annotation of not required (NR), not applicable (NA), previously complied with (PCW) or satisfactory as is (SAI), will be indicated in the applicable task/operation description block. The technician will place an informational note in the task/operation description block identifying why a WCD task/operation was NA, NR, PCW or SAI. The technician will stamp and date the WCD in the task/operation description block, not the PAC certification block.
(Added) NOTE: (Aircraft Only) Any aircraft specific technician annotating on a WCD an operation as NR, NA, PCW or SAI, will notify the Production Supervisor or Planner so the applicable task/operation can be deleted as required. Place an informational note in the task description block explaining why the task was not accomplished. The technician will stamp and date the WCD in the task description block, not the PAC certification block. When a task/operation listed on a WCD is NR, PCW, NA or SAI, the planner will stamp and date in the applicable task/operation block, not the PAC certification block.

<p>(Added) NOTE: (Exchangeables/Local Manufacture Only) For MISTR and temporary 206 workloads the supervisor or planner is not required to be notified. The MISTR/temporary workload technician annotating a WCD operation as NR, NA, PCW or SAI, will place an informational note in the task/operation description block explaining why the task/operation was not accomplished. The technician will stamp and date the WCD in the task/operation description block, not the PAC certification block.</p>
<p>19.3.5.2. (Added) When a WCD contains consecutive operations that will not be required, a large hand scribed “Z” shall be lined out through the operations. The mechanic shall include within the “Z” a statement describing the reason the marked out operations are not required. The technician will stamp and date beside the statement.</p>
<p>19.3.5.3. (Added) All stamps and dates on WCDs must be clear and legible. Any date format is acceptable providing the date can be determined. The month may be identified using alpha or numerical characters (Jan, Feb, Mar, or 01, 02, 03, etc.).</p>
<p>19.3.5.4. (Added) A technician who makes a documentation error, stamps or dates a WCD illegibly, or in error, shall write in Red “VOID” across the impression. The technician shall enter the correct documentation and re-enter a legible stamp/date.</p>
<p>19.3.5.5. (Added) Submit a Request for Change to WCD to Planning through the supervisor for WCD discrepancies using AFMC Form 957.</p>
<p>19.3.5.6. (Added) Initiate a WCD/MWR or notify the supervisor when stumble-on (unpredictable, unplanned) tasks/operations are identified, to ensure a WCD is created to identify all disturbed systems and follow-on maintenance actions. See Chapter 20 (Added).</p>
<p>19.3.5.7. (Added) Document the AFTO Forms 781 and other aircraft forms in accordance with TO 00-20-1 when required. See Chapter 20 (Added).</p>
<p>19.3.5.8. (Added) Notify supervisor prior to accomplishing tasks/operations requiring “Q” stamp.</p>
<p>19.3.6. (Added) Production Controller /Scheduler shall:</p>
<p>19.3.6.1. (Added) Serve as a member on the PPT when requested.</p>
<p>19.3.6.2. (Added) Purge in-process WCDs and reprint when notified by the Planner.</p>
<p>19.3.6.3. (Added) Receive completed WCDs and retain electronically or hard copy in an auditable file for a minimum period of two years. Documents may be retained for a longer period at local discretion.</p>
<p>(Added) NOTE: In areas that have Records Section, production controller/scheduler will forward completed WCDs to Records Section where they will be retained electronically or hard</p>

copy for minimum period of two years.
19.3.6.4. (Added) Prepare, in conjunction with the Production Supervisor, routing documents when none are preprinted.
19.3.6.5. (Added) Enter item serial number on the WCD when item is delivered for work, where applicable.
19.3.6.6. (Added) Distribute and receive WCDs, where applicable.
19.3.6.7. (Added) Review, stamp (Scheduler “C” stamps), and date the completed WCDs to ensure all required certification blocks have been stamped and dated. If WCD is not complete or contains documentation errors, notify the production supervisor for correction. Scheduler will not process D6M (sell) transaction for end items prior to reviewing and “C” stamping WCDs. Local procedure can be developed for aircraft process (for amount of time for scheduler to complete).
19.3.6.8. (Added) Local procedures can be developed for scheduler to review multiple 173 cards and stamp/date on one 173 card to certify review.
19.3.7. (Added) COR will:
19.3.7.1. (Added) Serve as a member on the PPT when requested and assists in the development of the WCD by identifying quality (Q) inspection code, and any other quality requirements contained in the QAP for that workload.
19.3.8. (Added) Cognizant Engineering Authority will:
19.3.8.1. (Added) Provide input to PPT when requested for the development of the WCD by identifying critical characteristics used in the identification of critical task/operation for that workload, including those associated with CSIs.
19.3.8.2. (Added) Participate in PPPT meetings.
19.4. (Added) Preparing Process Orders.
19.4.1. (Added) AFMC IMT 561. Process Orders are locally developed technical data used at all ALCs. The intent must not be to develop and use AFMC IMT 561 in lieu of official technical data that is available and can be used. If Process Order coordination process creates a work stoppage, group engineering will notify the production supervisor/planner to initiate an AFMC Form 202. A Process Order may be developed:
19.4.1.1. (Added) When there is a unique requirement to describe specific applications, procedures, techniques, shop practices and methods to complement approved technical data.

19.4.1.2. (Added) To establish procedures for locally designed equipment, fixtures, templates, etc.
19.4.1.3. (Added) To establish procedures for equipment operation where COTS manuals are not available or are inadequate.
19.4.1.4. (Added) To combine requirements from multiple sources of technical data into one procedure from existing technical data.
19.4.1.5. (Added) To establish alternative procedures to prevent production delays due to the configuration of the aircraft, missile, or commodity during depot maintenance (i.e. systems/components inoperable or disassembled for long periods of time).
19.4.1.6. (Added) When Process Orders exceed the maximum number of pages, an attachment may be used to continue the process order.
19.4.2. (Added) Development of Process Orders. Local procedures shall be developed by the appropriate engineering organization for preparation, control, monitoring, distribution, and deletion of all Process Orders. Process Orders will be controlled as technical data in production areas. The applicable engineering organization shall maintain the Process Order master file. The Process Order number will be determined locally. Process Order shall be prepared according to direction in Table A14.6 .
19.4.2.1. (Added) The applicable engineering organization and the PPT determine Process Order requirements. The applicable engineering organization is the OPR for the development of Process Orders. Engineering can request technical expertise from organizations as required. For mandatory coordination and signatures of Process Orders refer to Table A14.6 . Coordination office and signatures from applicable organizations will be shown on the Process Order. Electronic coordination is authorized for all coordinating and approving officials.
19.4.2.2. (Added) If a Process Order contains verbatim TO information the Process Order will be reviewed each time the subject TO is changed for currency. If the Process Order does not contain verbatim TO information the Process Order will be reviewed every two years for currency. The OPR will update process orders as required and the distribution function will update the master Process Order index.
19.4.2.3. (Added) When technical data is changed the engineering organization shall initiate a review within fifteen working days of when the change is formally posted to the applicable technical data. If the technical data change results in a change to the Process Order the following statement or equivalent shall be entered at the top of block 11 of the AFMC IMT 561, <i>Process Order</i> : NOTE: Process Order Updated Due to a Technical Data Change.
19.4.2.4. (Added) The Process Order shall be updated to reflect the latest technical data change dates and change numbers even if there were no changes affecting the procedures contained on the process order. If no Process Order procedures have been affected, process engineers may

update title page with tech data version date and change number without re-coordinating the entire Process Order.
19.4.2.5. (Added) Process Orders containing technical data (i.e. torque values, dimensions, tolerances, specifications) shall be monitored to ensure that when technical data changes are made the applicable Process Order is reviewed and updated. Engineering, planning, and production are responsible for reviewing technical data changes and determining the impact to Process Orders.
19.4.2.6. (Added) Process Orders shall not compromise form, fit, or function of an aircraft, missile, or commodity without proper formal coordination and approval from the cognizant engineering authority. The appropriate engineer will sign the AFMC IMT 561 block 13.
19.4.2.6.1. (Added) Local procedures may be developed for engineering red-line changes to Process Orders.
19.4.2.7. (Added) The applicable Engineering organization will ensure the Process Order contains the required ‘Warning, Cautions, and Notes’.
19.4.2.8. (Added) A Process Order containing verbatim technical data information shall have the technical data number, basic date, change date, and change number shall be identified on the first page of the AFMC IMT 561 in block 11, instruction under the heading “technical data reference”.
19.4.2.9. (Added) Process Orders Scientific and Technical Information (STINFO) Markings. Process Orders shall contain on the front page a Distribution Statement, Export Control Warning, and Destruction Notice.
19.4.2.9.1. (Added) Distribution Statement. If the Process Order is tied to a TO, use the same distribution statement as the TO. If the Process Order is tied to more than one TO, use the most stringent distribution statement among the TOs. If the Process Order is not tied to a TO, or any other document incorporating a distribution statement, then the developing engineering office will assign the appropriate distribution statement. (Refer to AFI 61-204, <i>Disseminating Scientific and Technical Information</i> , and TO 00-5-1, <i>AF Technical Order System</i> , to determine and assign the applicable distribution statement).
19.4.2.9.2. (Added) Export Control Warning. Use “WARNING—Export Controlled”.
19.4.2.9.3. (Added) Destruction Notice. Use “Destruction Notice—Destroy by any method that will prevent disclosure of contents or reconstruction of the document.”
19.4.2.10. (Added) Prior to Process Order formal implementation and distribution the applicable engineering organization will schedule a formal Process Order validation/verification (val/ver). The val/ver will be performed by production and requires 100 percent hands-on performance of all procedural (operational, maintenance, calibration, equipment set-up, etc.) tasks contained within the Process Order. The Process Order val/ver will be documented and maintained by the

applicable engineering organization for a minimum of two years.
(Added) NOTE: Process Orders developed prior to this change are exempt from performance of validation/verification as these Process Orders have been in use in maintenance production areas.
19.4.2.11. (Added) After the appropriate engineer develops/approves the process order and ensure a val/ver were performed (see paragraph 19.4.2.10) the Planner shall ensure the process order number is identified on the required WCD, and to the task/operation requiring the use of the process order.
19.5. (Added) Stamps.
19.5.1. (Added) Stamps are issued to maintenance personnel to denote status on WCDs. Maintenance stamps will be issued to maintenance personnel to certify, by stamping and dating, that work has been accomplished and completed as required by specified technical data. Any time a maintenance stamp is used the stamp impression will be dated.
19.5.1.1. (Added) Local publications will be developed to retain control of maintenance stamps. As a minimum, local publications will include the following:
19.5.1.1.1. (Added) Designation of the organization responsible for issue and control of stamps. List the responsibilities of the organization's stamp monitor.
19.5.1.1.2. (Added) Administrative procedures/criteria for request, issue, control, accountability, revocation, and recall of stamps.
19.5.1.1.3. (Added) Requirements for documenting request, issue, receipt relocation, loss and annual inventory of stamps.
19.5.1.1.4. (Added) Procedures and responsibilities for performing an annual inventory of the stamps.
19.5.1.2. (Added) Only stamps issued and controlled through the organization Stamp Monitor will be used for the certification/verification of depot maintenance.
19.5.1.3. (Added) The stamps listed below have mandatory issue and use requirements and may only be issued to and used for the purpose specified.
19.5.1.3.1. (Added) (M) Maintenance Stamp. A stamp issued to production maintenance personnel for certifying accomplished maintenance tasks. (M) Maintenance stamps will not be used to certify work unless the mechanic has met all required qualification and training requirements identified under the PAC Program.
19.5.1.3.2. (Added) (N) Non Destructive Inspection (NDI) Stamp. Issued to NDI PAC certified mechanics. Mechanics must be trained and qualified in NDI maintenance tasks prior to being

issued an (N) stamp.
19.5.1.3.3. (Added) (P) Production Supervisor Stamp. Issued to production supervisors to certify or change inspection codes on maintenance WCDs. Other uses may be included in local publications. Stamps are required for WCD related responsibilities.
19.5.1.3.4. (Added) (IET) Planning Stamp. Issued to the Planner to verify or change requirements on maintenance WCDs. Other uses may be included in local publications. Stamps are required for WCD related responsibilities.
19.4.1.3.5. (Added) (C) Scheduler Stamp. Issued to the scheduler to ensure all required certification blocks have been completed. Procedures may be included in local publications.
19.5.1.3.6. (Added) (Q) Quality Stamp. Issued to the COR to ensure certification and verification of inspection, when required, on WCDs are complete. Other uses may be included in local publications. Stamps are required for WCD related responsibilities.
19.5.1.3.7. (Added) (MRT) and (PAO) Stamps. Stamps are issued to designated members of the Maintenance Review Team (MRT) to certify authorization for work. Hand scribed AFMC Form 173 WCDs are not considered approved and cannot be used to perform maintenance unless stamped and dated by the MRT or planner/IET. Electronic signatures and dates using PDMSS are acceptable.
19.5.1.4. (Added) Other stamps may be authorized locally. Local procedures must specify conditions for use. (Reference Table A14.7.)
Chapter 20 (Added) - DEPOT MAINTENANCE PRODUCTION SUPPORT quantity
Section 20A-Overview
<p>20.1. (Added) Purpose. This chapter contains policies and procedures required to conduct Depot Maintenance (DM) production support activities for aircraft, exchangeables (commodities), Other Major End Items (OMEI) (missiles, engines, etc.), and associated components/parts. These activities are grouped into several DM categories to include Programmed Depot Maintenance (PDM), Modification (MOD), Unprogrammed Depot Level Maintenance (UDLM), unpredictable, and exchangeables requirements. It specifically addresses the overall philosophy, policies, procedures, organizational structure, key personnel duties and responsibilities, key functional area requirements, and systems necessary to perform DM production support within USAF guidance. For the 309th Aerospace Maintenance & Regeneration Group (AMARG), procedures in this instruction pertaining to data systems are not applicable. AMARG will continue to use the commercial off-the-shelf (COTS) products in place of the legacy systems used at the Air Logistics Centers (ALCs). References to Defense Logistics Agency (DLA) material support functions apply to all groups within DM with the exception of AMARG & Kadena that follow AFMAN 23-110, <i>USAF Supply Manual</i>. Also, for the applicability of this Chapter to the Software Maintenance Group (SMXG) and the Maintenance Support Group (MXSG), see Section 20D and Section 20E, respectively. This policy will be</p>

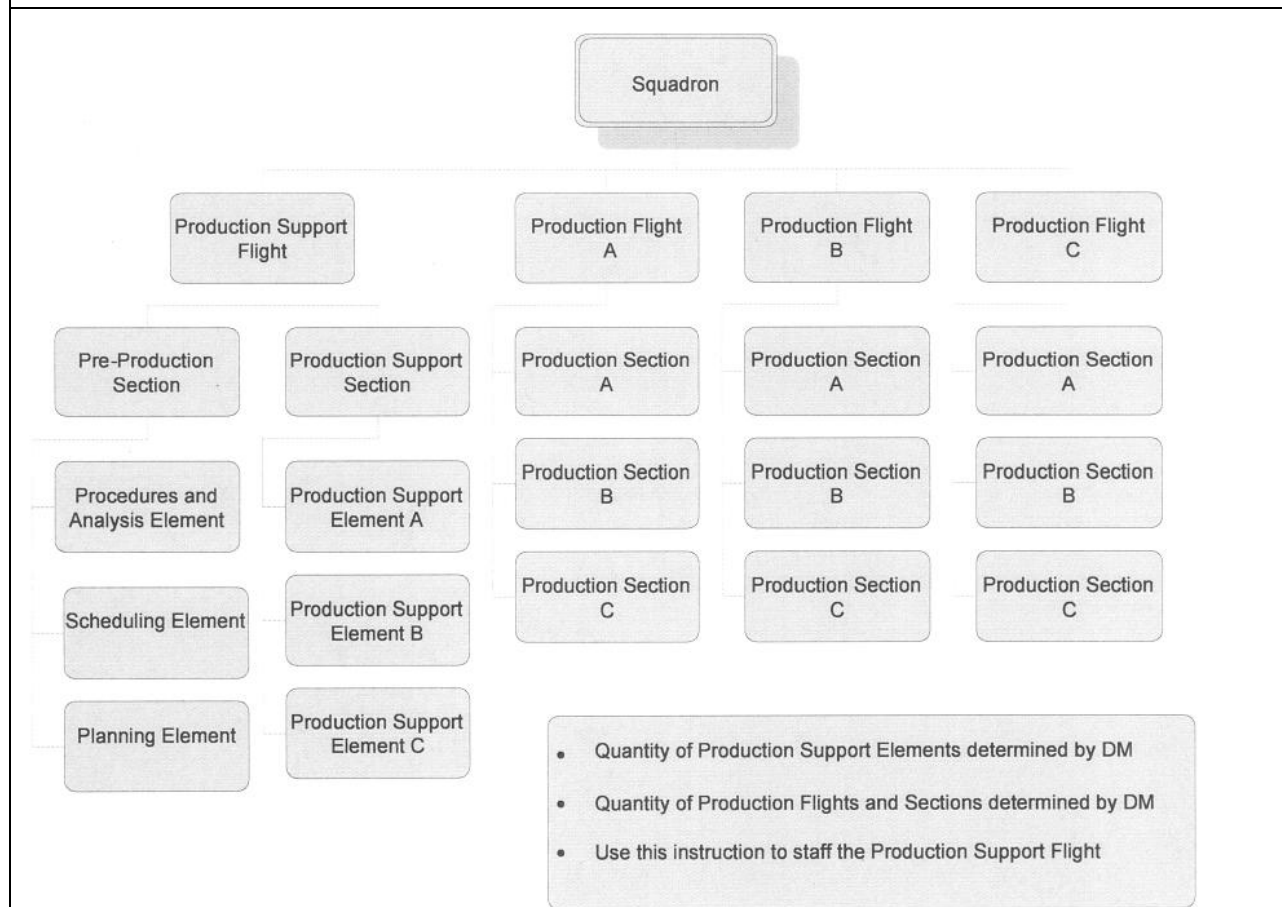
supplemented by each ALC with local operating instructions.
20.2. (Added) Philosophy. DM exists to support the warfighter. It provides this support by applying its resources to keep the mechanic on task. DM strives to apply the right resources at the right time at point-of-use to execute a warfighter needs-driven production plan and schedule. Process improvement results, in turn, assist in determining personnel duties/responsibilities, organizational structure, enterprise software configuration requirements, facility requirements, and other DM requirements. In simpler terms, all DM activities must be process improvement-based, must keep the mechanic on-task, and must optimize warfighter support. Key tenets for DM include:
20.2.1. (Added) Standardized repair process (reduced flow days).
20.2.2. (Added) Focus on throughput (constraint management).
20.2.3. (Added) Support on the shop floor (Production Support Flight).
20.2.4. (Added) Synchronized backshop repair.
20.2.5. (Added) Proper allocation of manpower/skills.
20.2.6. (Added) Daily repair based on greatest AF need.
20.2.7. (Added) Defined roles and responsibilities.
20.3. (Added) Policy. This chapter contains functional policy for DM performed by the Maintenance Wings (MXWs) at the USAF's ALCs and the functional relationships with support organizations (e.g., Air Force Global Logistics Support Center (AFGLSC), System Program Office/System Program Manager (SPO/SPM), and DLA). Compliance is mandatory unless a waiver is approved per Chapter 1, paragraph 1.29 . HQ AFMC/A4D is OPR for this chapter and will provide clarification of DM policy. The OPR will accomplish an annual review of this chapter during the anniversary month of this publication to ensure its content is current, accurate, and relevant. The OPR will also coordinate changes to this chapter through HQ AFMC/A4.
20.4. (Added) DM Support Process. This section describes the DM process as developed during the Depot Maintenance Transformation (DMT) initiative. This process "leaned out" and standardized the Aircraft and Depot Repair Enhancement Processes previously established by AFMCI 21-129, <i>Depot Maintenance Management, Depot Repair Enhancement Process (DREP)</i> and AFMCI 21-133, <i>Depot Maintenance Management For Aircraft Repair</i> (superseded by this supplement). The DM process supports all assets currently and potentially subject to DM and is therefore generic yet meaningful. There are two sub processes included in the support process: Pre-Production and Production Support. All DM sub processes and support functions are described in the following sections to include each function within the sub processes (e.g., Production Planning).

20.5. (Added) DM and Material Systems. Personnel will use the HQ AFMC designated standard maintenance and material systems to manage and support DM.
20.5.1 Requirements Management/Configuration Management (RM/CM) Process. A detailed description can be found in the Requirements Management Plan for the Logistics Process on the HQ AFMC/A4N Systems Integration Division Community of Practice (CoP). All requirements, whether a new requirement, system discrepancy, or technical upgrade, require that a Communications and Information Systems Requirements Document (CSRD) be written using the Information System Management Tool (ISMT). For HQ AFMC, the CSRD must flow through the HQ AFMC Integrated Requirements Review Board (IRRB) approval process with HQ AFMC approval being the IRRB, chaired by the HQ AFMC/A4 Deputy Director, Maintenance. After a CSRD is approved by the IRRB, it moves on to the Air Staff equivalent of the IRRB, labeled the Air Force Logistics Requirements Board (HQ AFMC/A4RB) process, leading to final approval for implementation or disapproval of the CSRD. A list of these systems, their purposes and their functionalities is contained in Table A14.11 .
20.6. (Added) General Information.
20.6.1. (Added) The term “production” refers to the Production Flights, Sections, and/or Elements that perform DM. Similarly, the term “Production Support” refers to the units in the Production Support Flight that support the performance of DM (e.g., planning, scheduling, etc.). Also, the name of the flight, section or element is used in lieu of individual flight functional titles (as they relate to responsibilities and procedures) in most paragraphs since MXW squadrons are authorized to select and employ positions per paragraph 20.7 .
20.6.2. (Added) Electronic Maintenance Information Systems (MIS) forms used in lieu of hard copy are acceptable providing the MIS forms fulfill the intent of the hard copy and provide required reporting data.
20.6.3. (Added) AFMC Request for Quote (RFQ) Policy within DM. AFMC Form 501, <i>Request for Quote/Rough Order of Magnitude</i> , will be used to process and control RFQ data flow between the customer and the Pre-Production Section. A DLA Form 1838, <i>Organic Manufacturing Quote</i> , is also authorized as an alternative RFQ form for DLA requests for ALC organic manufacturing quotes.
20.6.3.1. (Added) Responsibilities:
20.6.3.1.1. (Added) The customer will initiate the RFQ process with a request for quote for a depot product or service to the wing’s single point of entry.
20.6.3.1.2. (Added) The MXW OB office shall act as a single point of entry and exit for wing RFQ forms and data. The MXW OB will promote and control RFQ data flow between customers and responsible wing personnel. RFQ status will be maintained by the MXW OB office. Note: The AMARG single point of entry will be the 309th AMARG SPTS MXDU OB office.
20.6.3.1.3. (Added) The Pre-Production Section assigned shall complete the requested quote

and will return the completed RFQ form to the MXW OB office.

20.7. (Added) Organization. DM organizations at the ALCs will organize using the squadron/flight/section/element structure as described in the standard wing structure guidance in AFI 38-101, *Air Force Organization*. DM units will organize as indicated in **Figure 20.1**.

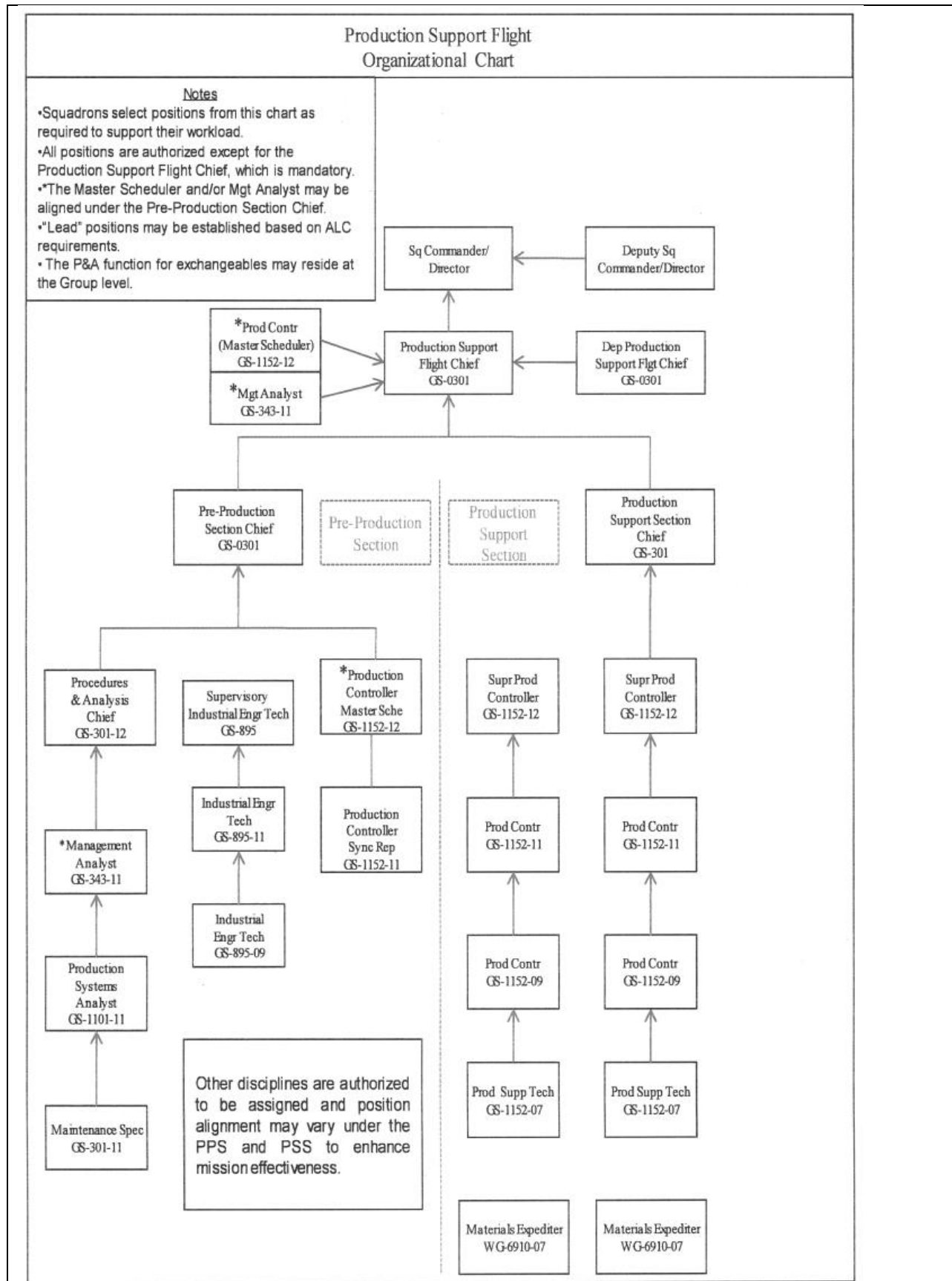
Figure 20.1. (Added) DM Organization.



20.7.1. (Added) DM Positions. Use **Figure 20.2** to build and staff DM organizations. Squadrons may select the Production Support Flight positions required to support their workload. Squadrons may not establish other positions to perform the duties and responsibilities assigned to these positions by this instruction. In other words, the assigned duties and responsibilities must be performed by incumbents in the below positions. Position alignment may vary under the Pre-Production Section (PPS) and Production Support Section (PSS). Other disciplines may also be assigned to the PPS and/or PSS to enhance the effectiveness of the mission.

20.7.1.1. (Added) The PPS performs strategic planning, master scheduling and analytical activities needed to ensure production requirements are fully supportable prior to asset induction. Activities include customer requirements analysis, long- to short-range production planning, master production scheduling, capacity and material requirements planning, and contingency

(what-if) management.
20.7.1.2. (Added) The PSS performs the day-to-day scheduling and material technician activities required to keep the mechanic continually engaged in asset repair from initial induction to final sell. These activities include the research, direct line ordering and movement of parts and material within the maintenance organization; coordinating with AFGLSC and DLA to manage “awaiting parts” assets; scheduling and monitoring assets through the repair process; researching, and ensuring Job Order Numbers (JONs) are opened properly for workloads; managing parts removed to Facilitate Other Maintenance (FOM); assisting production personnel in resolving engineering/quality support issues; delivering and/or coordinating delivery of tools/support equipment.
20.7.1.3. (Added) Squadrons may establish “lead” positions to manage multiple personnel in identical positions. For example, a “Planner Lead” position may be established to manage multiple Planner positions.
Figure 20.2. (Added) Production Support Flight Positions.



20.8. (Added) Responsibilities.
20.8.1. (Added) HQ AFMC/A1, Director of Personnel. Responsible for Manpower and Personnel policy.
20.8.1.1. (Added) HQ AFMC/A1K. Responsible for policy and guidance on the position classification and staffing of DM organizations which include the development of core personnel documents and establishing career progression paths for DM personnel. Advise and assist in developing DM organizational structure. Responsible for providing labor relations advice and guidance in dealing with union and management issues.
20.8.1.2. (Added) HQ AFMC/A1M. Responsible for advice and support of DM on manpower and organizational issues. Plan and execute necessary manpower requirement determinations, Unit Manpower Document (UMD) changes, and all required organizational changes.
20.8.2. (Added) HQ AFMC/A4, Directorate of Logistics. Responsible for developing and implementing DM management policy within AFMC. HQ AFMC/A4 provides resources and functional managers to address DM issues as indicated in the following paragraphs.
20.8.2.1. (Added) HQ AFMC/A4D, Depot Operations Division. Assigned as OPR for this chapter and the functional manager for operational organic DM activities. Provide DM policies, procedures and guidelines for production, planning, scheduling, and process improvement. Conduct studies and perform analyses on production processes and financial performance to provide standard measurements and develop operational goals. Facilitate increased depot performance by providing process improvement tools. Ensure rapid insertion of new policy governance. Incorporate emerging functional data systems technologies and their associated process and policy changes. Is the primary interface with AFGE Council 214 for union partnering to incorporate overall process changes. Serve as functional manager for DM organic repair, ensuring top quality products and services are delivered to the warfighter. Provide command-level strategic policy, guidance, and staff coordination of all activities required to operate DM activities for Air Force weapon systems and components. Serve as functional manager for DM Interservicing Agreements/ arrangements, workload planning, functional information systems, infrastructure management and investments. Will review this chapter at least annually on the anniversary date of the Command Supplement and coordinate changes with the HQ AFMC OPR.
20.8.2.2. (Added) HQ AFMC/A4F Centralized Asset Management (CAM). Responsible for planning, budgeting, and executing Air Force sustainment funding at an enterprise level to maximize capabilities while minimizing cost and providing continuous improvement to sustainment processes.
20.8.2.2.1. (Added) Requirements Review Boards.
20.8.2.2.1.1. (Added) Spares Requirement Review Board (SRRB). The AF established the SRRB to combine separate AFMC, MAJCOM and ANG (hereinafter included under the CAM

and Fund Holders designator as an AF customer of the Working Capital Fund) budgeting processes for AF secondary items supporting the worldwide requirement for Consolidated Sustainment Activity Group – Supply (CSAG-S) reparable and consumable items and validating the CSAG-S portion of the Air Force Cost Analysis Improvement Group (AFCAIG) Cost Per Flying Hour (CPFH) submission.
20.8.2.2.1.2. (Added) Aircraft and Missile Requirements (AMR). The AMR process is used to develop, review, validate and approve depot level maintenance and repair for aircraft and missile systems within the weapon system sustainment portfolio. This applies to all AF organizations requiring and providing depot maintenance on AF systems, whether the work is performed organically, contractually or via inter-service. This does not apply to Federal Aviation Administration (FAA) certified systems or systems supported via interim contract support (ICS). The AMR process is documented in the Logistics Requirements Determination Process (LRDP) Guide which can be located on the CAM CoP: https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=23211 .
20.8.3. (Added) HQ AFMC Air Force Global Logistics Support Center (AFGLSC). Responsible for developing and implementing AF doctrine, strategies and regulatory guidance for AF Supply Chain Management. Ensure supply chain processes, to include requirements, budgeting, purchasing, repairing, and enterprise item management, are integrated within the Directorate of Logistics and with the internal/external sources of supply/repair to assure AF directed levels of performance within approved resources. Serve as AF liaison to DLA for supply issues. Benchmarks and is responsible for management of the Nuclear Weapons Related Materiel (NWRM) storage facilities, conducts analyses and ensures continuous improvement of supply chain processes to increase performance, reduce cost, mitigate risk, and assure accountability. Also responsible for AFMC policies for strategic planning, supply chain analysis, asset identification, customer relations management, and workforce strategies.
20.8.4. (Added) HQ AFMC/FM. Financial Management (FM). Responsible for developing policy and procedures for budgeting and funding of the Consolidated Sustainment Activity Group – Supply (CSAG-S) (formerly Supply Management Activity Group) and Consolidated Sustainment Activity Group – Maintenance (CSAG-MD) (formerly Depot Maintenance Activity Group) programs. Provide funding documents and unit cost targets to the ALCs. Serve as focal point for fee-for-service issues.
20.8.5. (Added) Center Commander/Director and Wing Commander/Director duties are contained in Chapter 3 Section B .
20.8.6. (Added) Group Commander/Director (MXG/CC/CL/DD) Responsibilities. In addition to the responsibilities contained in Chapter 3 Section B , the Group Commander/Director will:
20.8.6.1. (Added) Chair the periodic (minimum monthly) Production and Exchangeable meetings.
20.8.6.1.1. (Added) Production Meeting. The purpose of the meeting is to discuss

scheduled/impending production requirements, establish work priorities, and coordinate schedule changes. This meeting ensures all DM production requirements are effectively scheduled and problems are resolved. The Group Commander/Director will establish the frequency of the meetings. As the meeting chairperson, the Group Commander/Director will:
20.8.6.1.1.1. (Added) Ensure meeting attendees, as a minimum, include each Squadron's Commander/Director.
20.8.6.1.1.2. (Added) Ensure Squadron's Commander/Director brief current and projected production status and associated repair plans, emphasizing attention to high visibility assets.
20.8.6.1.1.3. (Added) Ensure resources are allocated as required to fulfill production requirements.
20.8.6.1.1.4. (Added) Ensure any constraints that cannot be resolved are elevated to the Wing level.
20.8.6.1.2. (Added) Exchangeable Meeting. Ensure meeting topics, as a minimum, include: Execution and Prioritization Repair Support System (EXPRESS) induction constraints (see AFMCI 23-120, <i>Execution and Prioritization Repair Support System (EXPRESS)</i>), Awaiting Parts (AWP) issues, asset status; Mission Capable (MICAP), Surge, and Repair Cycle Status; production schedule execution and deviations; prioritizing assets requiring/competing for shared resources; material constraints. Ensure any constraints that cannot be resolved are elevated to the Wing level.
20.8.7. (Added) Squadron Commander/Director (SQ/CC/CL) (formerly the Fixer) Responsibilities. In addition to the general duties contained in Chapter 3; Paragraph 20.11.1 in the Exchangeable Section and Paragraph 20.43.3.10 in the Aircraft and Missile Section of this chapter , the Squadron Commander/Director will:
20.8.7.1. (Added) Review production schedules to de-conflict and prioritize assets requiring/competing for shared resources. Review any overdue special inspections, time change items, and planned corrective action. Review status and completion plan of Time Compliance Technical Orders (TCTOs) that will ground aircraft within 30 days. Review previous deviations to production schedules. Review and address any issues impacting asset flow time.
20.8.8. (Added) Production/Maintenance Personnel. The production/maintenance personnel ensure necessary repair/overhaul tasks are accomplished within established standards. They employ all of the exchangeable process tenets, to include first-in, first-out. Production/maintenance personnel will complete the proper documentation and update the appropriate data systems in a timely manner in accordance with established technical data. Parts will be requested early in the repair process. Only parts necessary to complete repairs will be ordered.
20.8.9. (Added) Production Support Flight Chief. Responsible to the Squadron Commander/Director for the leadership, supervision, and training of personnel in assigned

sections and elements. The Production Support Flight Chief manages the planning, scheduling, and material activities required to support execution.
20.8.10. (Added) Pre-Production/Production Support Section Chiefs. Responsible to their respective Flight Chiefs for the leadership, supervision, and training of assigned personnel. These are optional positions. If these positions are not used, the responsibilities revert to the Production Support Flight Chief. If used, the following responsibilities apply:
20.8.10.1. (Added) The PPS Chief. Responsible for planning and scheduling activities required to execute DM production; is also responsible for collaborating with SPO/SPM, AFGLSC, DLA, customers, and PSSs in coordinating activities required to support production.
20.8.10.2. (Added) The PSS Chief. Responsible for scheduling and AF DM material support activities.
20.8.11. (Added) Planning, Scheduling, and Procedures & Analysis (P&A) Supervisors. Responsible to the PPS or PSS Chief, or the Production Support Flight Chief for managing the activities of their respective elements as indicated below:
20.8.11.1. (Added) Pre-Production Section (PPS).
20.8.11.1.1. (Added) Planning Element Supervisor. Responsible for short, medium and long-range planning of DM workload execution for aircraft, exchangeables, missiles, and/or OMEI. Provide advice and assistance to the Production Flight, Production Support Flight, and the Production Manager in the areas of planning, designing, analyzing, and improving production control through the development of more efficient and effective DM processes.
20.8.11.1.2. (Added) Planner /Industrial Engineering Technician (IET). Responsible for development of new workload-planning packages and daily planning functions which support the production shop which include but are not limited to: establishment of labor, equipment, flow day, and facility standards; refine Mission Design Series (MDS) critical path; provide IET services which includes work measurement studies; develop and file maintain the DM repair Bill of Material (BOM); establish Work Control Documents (WCDs) to include identification of NWRM assets IAW AFI 20-110, <i>Nuclear Weapons-Related Materiel Management</i> , and its AFMC supplement; identification of skills, training, equipment, and facility requirements; research, plan, and initiate job acceptance for programmed and non-programmed workloads; planning for job-routing/non-job routing; identification of all necessary tooling, engineering, provisioning data, and TOs to support production; provide direct costs to establish the end item sales price for programmed and non-programmed workloads; evaluate production processes and methods improvement to minimize production flow time.
20.8.11.1.3. (Added) Master Scheduler. Responsible for approving the schedule for asset induction, work plan for aircraft induction, carry-out, flow days, etc. Chair Pre-Induction Aircraft Conference. Reviews system schedule and determines impacts of MODs, UDLM, and new or changed DM requirements. Review resource supportability by MDSs per fiscal year.

Adjust schedule per facility or skill constraints. Note: This position may be assigned to the Production Support Flight Chief as necessary.
20.8.11.1.4. (Added) P&A Element Supervisor. Responsible for overseeing analysis functions critical to the efficient and effective operation of the Production and Production Support Flights.
20.8.11.1.5. (Added) Management Analyst. Responsible for advising the Production Support Flight Chief of changes in requirements; perform studies to review and evaluate various program operations and processes within the organization structure; identify areas for improvement; is knowledgeable of the repair process and the maintenance suite of systems; prepare charts & data for meetings as required. Note: This position may be assigned to the Production Support Flight Chief as necessary.
20.8.11.2. (Added) Production Support Section (PSS).
20.8.11.2.1. (Added) Supervisory Production Controller. Responsible for managing daily AF DM material within the MX shop and scheduling support to the mechanic engaged in the repair of aircraft, exchangeables, and/or OMEI.
20.8.11.2.2. (Added) Production Controller (Scheduler). Manage the shop workload (i.e., repair, overhaul, MOD, and PDM activities, programmed and un-programmed) in worldwide support of weapon systems. Responsible for updating capacity information in EXPRESS (Exchangeables only). Monitor and manage shop capacity for both the input and output of assets. Synchronize support to schedule. Maintain control of WCDs (See Chapter 19).
20.8.11.2.3. (Added) Production Controller (Production Support Technician). Provide material management support, item research, direct-line order placement, monitor work in progress, develop, correct, or adjust information in data systems, and assist higher graded Schedulers when required.
20.8.11.2.4. (Added) Material Expeditor/Handler. Receive, route, and move parts, assemblies, components and other materials between repair stations/shops. Operates material handling equipment and if applicable, coordinates with AFGLSC NWRM storage facility personnel WRT movement of NWRM assets.
20.9. (Added) Special Positions within Maintenance.
20.9.1. (Added) Records Documentation Specialist (Forms and Records). (Location of this function is an ALC Option)
20.9.1.1. (Added) Review, annotate and store documents.
20.9.1.2. (Added) Document weapon system history with Comprehensive Engine Management System (CEMS), Reliability and Maintainability Information System (REMIS), Programmed Depot Maintenance Scheduling System (PDMSS), Core Automated Maintenance System (CAMS), and Malfunction Detection, Anal & Recording System/GRD Proc System

(MADARS/G081) as required.
20.9.2. (Added) Co-Located Positions.
20.9.2.1. (Added) Positions outside the MXW may be co-located to support requirements (e.g., Engineer, DLA Material Support, AFGLSC Depot Supply Chain Management (DSCM), etc.).
20.9.3. (Added) Support Functions.
20.9.3.1. (Added) Air Force Global Logistics Support Center (AFGLSC). Responsible for AF Supply Chain Management. Ensure supply chain processes, to include requirements, forecasts, budgeting, purchasing, repairing, and enterprise item management, are integrated within the ALC and have a direct interface with MX. Serve as the single AFMC face to DLA for supply issues. Benchmark, conduct analyses and ensure continuous improvement of supply chain processes to increase performance, reduce cost, mitigate risk, and assure accountability.
20.9.3.1.1. (Added) Depot Supply Chain Management (DSCM) Team (AFGLSC, DLA, Maintenance Representative). Role is to improve parts supportability to DM by providing a strategic, long term, outlook on parts integral to mission supportability. Will work in concert with the MXW, Supply Chain Manager (SCM), AFGLSC NWRM Storage Facility, and DLA to coordinate the strategic procurement of essential materiel, pursuing uninterrupted availability of aircraft, engines, missiles, and exchangeables.
20.9.3.1.2. (Added) Planning for DLA Managed Consumables (PDMC) Flight. Role is to improve material availability of DLA managed consumables across the AF enterprise at the time of need by enhancing the DLA demand plan.
20.9.3.2. (Added) Engineer (ENGR) and Equipment Specialist (ES). Both are responsible for providing technical support and for technical issues, reliability, quality, and deficiency reports (DRs) on items assigned to them.
20.9.3.3. (Added) ALC Financial Management (FM). Responsible for the utilization of funds practices at the ALCs and the management of unit cost target performance; performs financial cost analysis.
20.9.3.4. (Added) Defense Logistics Agency (DLA).
20.9.3.4.1. (Added) DLA Aviation (DSCR). Responsible for Supply, Storage, and Distribution duties to include retail supply support to DM utilizing Customer Support Specialists (formerly retail item managers) and Sustainment Specialists (formerly supportability specialists and demand Planners), material handlers, etc.
20.9.3.4.2. (Added) Distribution Depot. Responsible for materiel storage, packaging, receiving, inventory, and distribution in support of the depot repair function in accordance with Memorandums of Agreement (MOA), Memorandums of Understanding (MOU), or Support

Agreements.
20.9.3.5. (Added) Quality Assurance (QA). Is an integral part of all DM activities. The MXWs will implement QA programs to evaluate/assess all their programs. QA assessments are outlined in Chapter 8 of this instruction.
20.9.3.6. (Added) Product Support Center (PSC) (ALC Option). Is outside of the identified organizational structure. The PSC will be an enclosed, secure and controlled area and will be used for the purpose of maintaining and stocking CA/CRL tooling/equipment, locally manufactured, modified, or special end item unique tools and equipment, consumables and administrative supplies.
<i>Section 20B-Production Support for Exchangeable Repair</i>
20.10. (Added) Purpose. This section outlines the DM production support functional policies required to effectively operate and manage depot exchangeable repair processes and workload. The overarching purpose is to standardize the basic repair processes for ALC organic depot level repair and overhaul.
20.11. (Added) Organizations and Functions.
20.11.1. (Added) Squadron Commander/Director (formerly the Fixer). Is the single person accountable and responsible for assets in the production shop and the assigned resources to accomplish depot repairs. Using standard repair processes, is responsible for production output for their shop(s).
20.11.1.1. (Added) Has overall responsibility for the workload, planning, scheduling, and quality control in support of repair, production, overhaul, and manufacturing processes. Includes determining capacity parameters in EXPRESS to uphold the supportability function of the automated repair execution process.
20.11.1.2. (Added) Provide supervision, operational direction, and guidance to the maintenance shop chiefs and the Production Support Flight to ensure the most productive and cost effective methods are used to produce a timely and quality product that maximizes serviceable asset availability.
20.11.1.3. (Added) Is responsible for managing resources required to perform programmed and non-programmed workloads; will respond when the automated Supportability Module of EXPRESS considers repair to be constrained based on insufficient shop capacity. Capacity constraints are revealed daily in two EXPRESS output reports: the Supportability Report and Supportability Summary.
20.11.1.4. (Added) Chair the Exchangeable Meeting (formerly DREP) which is an informal meeting (as required) that discusses constraints and provides overall maintenance and production assessment to support the repair process; report status at a monthly Group level meeting. Weekly/bi-weekly meetings are strongly encouraged.

20.11.1.5. (Added) Form and manage depot field teams, when tasked, to provide worldwide support for customers, TCTO requirements, and TO 00-25-107, <i>Maintenance Assistance</i> , requests. (Reference AFMCI 21-120, <i>Organic Depot Field Teams</i> .)
20.11.1.6. (Added) Control what is inducted into maintenance. Duties may be delegated to the Production Support Flight. It is also within the Squadron Commander's/Director's authority to determine when end items are taken in or out of on work order (OWO) status. The Squadron Commander/Director must weigh customer requirements with the level of risk he is willing to accept. The Squadron Commander/Director decides when to take an item off OWO and place in the AWP store (remains on the "M" (maintenance) balance). Maintenance assumes the risk that the repair requirement will be satisfied through another avenue while awaiting delivery of AWP components every time an end item is taken off OWO due to AWP. If the repair requirement is satisfied, AWP-G/F condition end items may begin to stack up in storage because they no longer have a requirement. Even if the backorder is cancelled, most of the end items will have had some work performed on them that can only be recouped by the CSAG-MD if repairs are completed and ultimately a sale transacted. Strict adherence to existing policy and the following policy clarification will reduce the AWP backlog, capture true costs associated with depot repair, capture accurate consumption data needed to facilitate stockage of replacement items, and allow mechanics to perform repairs on required assets.
20.11.1.7. (Added) DM activities are barred from inducting assets (exceeding the net repair objective) to cannibalize as a source of supply for repair parts not available through normal supply channels. Parts needed to effect repairs will be requisitioned from the supply system. If repair parts are not received in a timely manner, the Squadron Commander/Director may seek relief by asking the AFGLSC to fund carcass cannibalization with an AFMC Form 206, <i>Temporary Work Request</i> . (See AFMCI 21-130, <i>Depot Maintenance Material Control</i> .) Thus, maintenance is paid for work associated with cannibalization and all demand data is captured in the applicable data systems. Under no circumstances is the Squadron Commander/Director authorized to induct beyond the repair objective for the purposes of cannibalizing parts unless a funded AFMC Form 206 is provided. The AFGLSC will provide the disposition and supply condition code of all assets inducted for cannibalization purposes when the work is completed.
20.11.2. (Added) Production Support Flight (PSF).
20.11.2.1. (Added) General. This section provides guidance and direction for operating a Production Support Flight (PSF). The PSF manages the planning, scheduling, and AF DM material activities required to support execution.
20.11.2.2. (Added) The PSF provides the following support (not meant to be all-inclusive):
20.11.2.2.1. (Added) Order material; provide status/follows up on selected items.
20.11.2.2.2. (Added) Issue received material to the shop.

20.11.2.2.3. (Added) Determine when item enters and exits AWP.
20.11.2.2.4. (Added) Workload Management (e.g., MISTRs, AFMC Form 206s, routed items, etc.)
20.11.2.2.5. (Added) Plan programmed and unplanned workload
20.11.2.2.6. (Added) Maintain DM repair BOMs.
20.11.2.2.7. (Added) Measure shop performance.
20.11.2.3. (Added) The Induction Process. All end items driven into repair or drawn into repair are assigned a 14-position end item document number through D035K. The end item document number stays with the end item until it is turned in to supply. The assets will be tracked using the same document number. Likewise, D035K, G402A, and G337 will use the same document number to account for reparables. The Scheduler will monitor and coordinate with the DLA Customer Support Specialist (formerly RIM) on delinquent in-transits.
20.11.2.4. (Added) The quantity per transaction (D7M) will always be “one each” to facilitate end item tracking. Workloads inducted with job designators “J” and “L” are exempt from the one-per-induction rule. Other workloads are exempt with an approved waiver.
20.11.2.5. (Added) Ordering From Supply. To order material, use standard operating procedures and systems. Use ABOM/NIMMS as the input system for material ordering. All shops must provide the end item document number, Standard Reporting Designator (SRD), and Required Delivery Date (RDD) with all requests. By including the end item document number on each issue request, D035K will react by linking the end item and component/piece-parts internally.
20.11.2.6. (Added) The end item document number is assigned by D035K and can be found on the WCD produced by G337. The SRD can be obtained from the AFTO Form 350, <i>Repairable Item Processing Tag</i> , the REMIS table, or the TO. The user provides the required delivery date.
20.11.2.7. (Added) When ordering parts, use the end item document number of the end item being repaired to ensure the right parts are linked to the right end item. D035K will edit end item document numbers against the database for end item document numbers.
20.11.2.8. (Added) All backorders against an end item are now considered AWP backorders regardless if the end item is in AWP or OWO status. D035K will automatically code piece-parts and/or component requisitions as AWP, with project code “AWP” and advice code “6N” when the end item document number, SRD, and RDD are entered on the issues request.
20.11.2.9. (Added) Bench Stock/Residual Materiel. Bench stock and residual materiel are two examples of maintenance owned bit-and-piece parts to be used before any additional bit-and-piece-parts are ordered. Production Support Technicians (PSTs) will query D035K to check if item is supported by Industrial Product-Support Vendor (IPV) prior to placing parts orders.

20.11.2.10. (Added) Other Sources of Materiel. When traditional sources fail to provide required parts by the required delivery date, maintenance or DLA may opt to use other sources for parts support. These other sources include approved cannibalization and save lists, local purchase, or local manufacture.
20.11.2.11. (Added) Local Purchase. For local purchase procedures, see AFMCI 21-130.
20.11.2.12. (Added) Local Manufacture. Parts catalogued with a National Stock Number (NSN) can be locally manufactured when the designated source of supply cannot meet the delivery date. Coordinate local manufacture with the source of supply. A funded AFMC Form 206 (T-Job) along with the appropriate blueprints/drawings must be provided for local manufacture. Local manufacture items must be properly documented and demand data must be captured and input into the supply system.
20.11.2.13. (Added) Cannibalization of Inducted Items. Cannibalization of inducted items is the removal of an installed assembly, subassembly, component, or part from one inducted item for use on another item with the intention of replacing it. Approval for Cannibalization of inducted items is within the authority of the Maintenance Group (MXG). A Cannibalization of inducted items occurs when a component ordered against an End Item/End Item Document number has to be file maintained to another End Item/End Item Document number because the component was robbed as applicable. Production Managers are not authorized to over-induct end items (in excess of the Net Repair Objective) for the express purpose of cannibalizing parts. (See AFMCI 21-130 for cannibalization procedures.)
20.11.2.14. (Added) Reclamation. Reclamation is the recovery of parts for further use from end items or excess assemblies. Parts removed by reclamation are generally not replaced and the end item may not be identifiable for turn in. Reclamation will be used instead of procurement or repair by the source of supply, after considering cost, whenever it provides the quickest means of satisfying a MICAP or other critical item requirements, or when there is no other known source of supply. (See AFMCI 21-130 for reclamation procedures.)
20.11.2.15. (Added) AWP Policy (See AFMCI 21-130, AFMAN 23-110, Vol. III, Part 2, Chapter 6, and AFMC Supplement to AFI 20-110 for NWRM assets).
20.11.2.15.1. (Added) When all the component parts have been received or canceled, D035K will automatically change the AWP-G to AWP-F (fully supportable). D035K will output a notification of the condition change, parts will be delivered, and work can be completed. The EXPRESS system will drive supportable AWP assets prior to requesting a DLA asset to be shipped to maintenance.
20.11.2.15.2. (Added) Moving AWP off Work-Order. A transaction will be processed to move the end item off the JON OWO and into AWP. The ZFA/L will be processed in D035K to load the AWP storage location. The backorders for parts/components will be file maintained automatically. Next, D035K will pass a D7 RF/PK to G402A to move the end item from OWO to AWP-G. All AWP end items will be maintained on the "M" balance.

20.11.2.15.3. (Added) Uninstalled parts in the shop for the end item will be returned with the end item. If possible, the parts returned from the shop should be stored with the end item; however, if there is no room or it is not practical, they may be stored in a separate area. Each part/component must be identified to a particular end item and cannot be co-mingled with parts from another end item.
20.11.2.15.4. (Added) AWP Supportable Notification. When an AWP end item becomes 100% parts supportable, D035K will generate an information notice. This is notification that the last backorder against a given end item has arrived (or cancelled) and the asset is ready to return to repair.
20.11.2.15.5. (Added) Moving an End-item from AWP to OWO. Once the last backorder is received, D035K codes the end item “FWP” or 100% supportable. G402A is used to transfer AWP's to OWO when the end item move notice is received from D035K.
20.11.2.15.6. (Added) End Item Turn-In Processing. When turning in an asset, the Scheduler will use the same end item document number created when the asset was brought into repair. D035K checks for existing backorders marked against the end item document number. If backorders exist, the system responds with a controlled exception “AK” notifying the user of existing backorders. DLA coordinates with maintenance prior to file maintaining or cancelling the backorders with this exception.
20.11.2.15.7. (Added) AWP Get-Well Efforts. Existing supportable end items must be worked off before additional carcasses are drawn in for repair. D035K has been programmed to facilitate the drawdown of FWP assets by first selecting end items coded FWP before other carcasses. Where systems miss opportunities to induct 100% supportable AWP/FWP coded assets; the scheduler must intervene in the process and draw available assets into repair. Which assets and the number of those moved are at the discretion of maintenance.
20.11.2.15.8. (Added) AWP Reconciliation. DLA will complete an annual AWP reconciliation. The purpose of this reconciliation is to ensure proper accountability of AWP end items, piece-parts on hand, and piece-parts on order. Use existing DIOH/AWP management reports to complete this reconciliation. The AWP Reconciliation will be coordinated with maintenance and scheduled by DLA.
20.11.2.15.9. (Added) Long lead-time AWP assets will be addressed during the Exchangeable meetings. These assets will be maintained on the “M” balance. Maintenance will coordinate with AFGLSC for disposition.
20.11.2.15.10. (Added) Storing Assets. DLA will store and control serviceable components, piece-parts, unserviceable end items, and AWP assets. (Note: NWRM assets are excluded.)
20.11.2.15.11. (Added) AWP Metrics. DLA will provide AWP by Resource Control Center (RCC), NSN and Source of Supply (SOS) to isolate problem components, poor support to repair shops, and SOS support. The information will be used to assist in solving wholesale and retail

stockage and issue problems.
20.12. (Added) Multiple Source of Repair (MSOR). MSOR items use a combination of organic and/or contract repair such as organic/organic, organic/contract, or contract/contract. The items are routed to the appropriate organic and/or contract repair sites.
20.13. (Added) Supportability. Supportability is measured in terms of carcass, capacity, funds and parts. Each of these resources affects a shop's ability to perform the repair. For example, lack of carcasses, parts, capacity, and funds will prevent the end item from being driven into the shop. All of these resources are evaluated each day as part of the repair process before any repairs are funded. The vehicle to evaluate resource supportability is the Supportability Module in EXPRESS.
20.13.1. (Added) EXPRESS (See AFMCI 23-120, <i>Execution And Prioritization Repair Support System (EXPRESS)</i>). EXPRESS measures carcass, capacity, funds and parts against predetermined criteria. In EXPRESS, AFGLSC has the ability to adjust carcass criteria. They also have the responsibility to see if carcasses can be made available where the EXPRESS Supportability Module considers repair to be constrained based on carcasses not being available. Two EXPRESS outputs that reveal when carcass constraints are evident are the Supportability Report and the Supportability Summary.
20.13.2. (Added) Organic Repair. EXPRESS will identify repairs for programmed workload. Programmed workload is defined as workload assigned a permanent control number.
20.13.3. (Added) Non-Programmed Workload Support. The non-programmed workloads may include: Insurance/Numerical Stockage Objective (INS/NSO) items, low demand items, local manufacture, items that are not Cooperative Logistics Supply Support Agreement (non-CLSSA) Foreign Military Sales (FMS) items, MODs/TCTO items, some Depot Maintenance Inter-service Agreement (DMISA) items, and other non-predictable workloads. These requirements will be worked using an AFMC Form 206.
20.14. (Added) Requirements. This process computes individual item requirements in D200. A D200A Item Recomputation is initiated (as necessary) to make corrections after the final computation has been printed. These corrections are passed to the Automated Budget Compilation System (ABCS) D075 and D035E, Readiness Based Leveling (RBL). AFGLSC will continue to validate forecasted repair/buy quantities and perform file maintenance. These actions are required for long range planning and budgeting of buy and repair requirements. Base and depot levels are computed when pipeline data is passed from D200 to RBL. Depot working levels are overlaid into EXPRESS by RBL.
20.14.1. (Added) Readiness Based Leveling (RBL) D035E. RBL is the AF system designed to allocate the D200A worldwide requirement among bases and the depot to reduce base expected backorders. RBL ensures the worldwide sum of levels does not exceed the requirement computed in D200A. RBL allocates all Adjusted Stock Levels (ASLs) unless there is an insufficient worldwide requirement to meet demands.

20.14.2. (Added) Exchangeable Induction Policy: The CSAG-MD is self-sustaining wherein all costs are required to be recouped through payments from our customers. DM should not usurp AFGLSC responsibility for determining how to satisfy repair requirements by over inducting carcasses as a source of supply for repair parts not available through normal channels of supply. AFGLSC must retain the authority for initiating buys, paying DM to “harvest” usable repair parts off carcasses held in supply, or use of any other means available to provide repair parts to the repairing agency.
20.15. (Added) Reparable Asset Process.
20.15.1. (Added) This is the process of unserviceable assets transferring from the customer to the repair facility. Upon successful funds application within daily EXPRESS process and receipt of D7, the unserviceable asset is moved directly from central receiving to the repair facility when a repair requirement exists in EXPRESS. If no immediate requirement exists, the unserviceable asset is stored in the warehouse pending future repair, reclamation, or disposal.
20.15.2. (Added) The EXPRESS logic determines which programmed demands to repair first and if an asset will be inducted that day. EXPRESS uses multiple systems to obtain item specific data that includes the Daily Demand Rates and specific EXPRESS MAJCOM Scenario Subsystem (EMSS) data. EXPRESS will generate a complete list of all programmed repair actions on a daily basis for organic items. Non-programmed workload requirements will be handled on an exception basis.
20.15.3. (Added) Supportability Module. EXPRESS automatically determines which items can be repaired by using the supportability module. Funding shortfalls are identified and AFGLSC will coordinate with the Product Directorate Funds Manager for resolution. High priority supportability failures should receive special management emphasis within the CSAG-S.
20.15.4. (Added) Automated Funding (J025A). After intervention, the scrubbed supportable list is passed to J025A for funding. If it passes funding, the list is passed back to EXPRESS. If there is a failure at the funding point, AFGLSC may be tasked to do further research.
20.15.5. (Added) D035K EXPRESS Table Loading. EXPRESS passes the funded supportable prioritized list to the D035K EXPRESS Table. Loading the list to the D035K EXPRESS Table starts movement of unserviceable assets into the applicable maintenance facility for repair.
20.16. (Added) EXPRESS Contingency Planning. In the event that the daily prioritization, funding, and distribution automated processes fail, there are various options available based on the circumstances causing the contingency.
20.16.1. (Added) Typically, if all data required for optimal EXPRESS processing is not available, ALCs should proceed with EXPRESS processing using the data available. Except in

the event that D035B data is not available, there are two options to consider.
20.16.1.1. (Added) If work in progress, plus workload from the previous Prioritized List limited by available repair resources adequately occupies the shop, no new EXPRESS run is necessary (i.e., it is better to work with the previous data than to use outputs produced by EXPRESS without the D035B file). Of course, the repair constraints must be considered manually in this case as the EXPRESS Supportability function will not be applicable.
20.16.1.2. (Added) Only if the unsupported repair objective plus work in progress is not sufficient to workload the shop should the scheduler request the system administrator to proceed with EXPRESS processing realizing the results will be somewhat compromised by the lack of current D035B data. Since the system administrator may be requested to proceed with EXPRESS processing, which will overlay the previous results, any scheduler planning to use the previous results needs to make a copy of the Prioritized List.
20.16.2. (Added) If EXPRESS fails to run, continue to repair assets where the previous day's repair left off (i.e., where the total repair objective was not supported, due to limited repair resources). The previous day's unsupported repair objective is visible on the EXPRESS Prioritized List. If the previous day's unsupported repair objective plus work in progress is not sufficient to workload the shop, the 'bringing in of additional workload' will be a managerial decision.
20.17. (Added) Manual Intervention of the EXPRESS Table. There may be times when it is necessary for the Scheduler to manually intervene with the automated process of developing the daily EXPRESS Table. This can be done in the EXPRESS Table Quantities Output in EXPRESS immediately following the Supportability Module run. All intervention transactions must take place as designated by the ALC EXPRESS office. Changes will not be accepted after this time. All file maintenance changes to EXPRESS data during intervention should be made with caution. The intervention window is the opportunity for AFGLSC to review and/or input recommended changes to the Scheduler for manual intervention. CAUTION: Incorrect input(s) will result in serious operational problems, data problems, funding problems, and possible erroneous repair drives. Any intervention for quantity or switch changes must be fully documented with descriptive reason statement, date, and name/title of person making change.
20.17.1. (Added) During intervention, there are no specific restrictions regarding deletion of stock numbers or quantities for which the Scheduler is responsible. However, barring only the exceptions specified below, the Scheduler is permitted to add only stock numbers or quantities that are identified on that day's EXPRESS Supportability Report.
20.17.2. (Added) The report reflects items that are both supportable and unsupportable. The added stock numbers or quantities must be limited to those which are prioritized above the lowest priority requirement supported by the funding burn rate. Moreover, stock numbers or adequate quantities shown as supportable must be selected and deleted from the EXPRESS Table to offset the repair costs of any stock numbers or quantities that are added.

20.17.3. (Added) Conditions Required for Manual Intervention. The Scheduler may only manually intervene in the automated process if one or more of the following circumstances exist:
20.17.3.1. (Added) Interchangeable and Substitution (I&S) Issues. Examples include Subgroup Master NSN versus Actual NSN, one-way interchangeable items, and Authorized for Procurement Purposes (APP) NSNs. To address these in intervention, a new NSN can be added but only when it is offset by deleting the identified NSN for which it substitutes.
20.17.3.2. (Added) Equipment constraints. EXPRESS does not consider the type or amount of equipment in the shop. The Supportability Module only calculates the number of hours available in a shop. The Scheduler must review the daily EXPRESS repair listing to ensure the capacity of the shop's equipment has not been exceeded for the items being driven into repair.
20.17.3.3. (Added) Personnel constraints. EXPRESS does not consider the skills available in the shop. When the repair listing cannot be supported due to personnel constraints, the Scheduler may correct the listing to accurately reflect the skills and/or number of personnel available.
20.17.3.4. (Added) Erroneous parts data. When an NSN fails for parts and research shows those parts are available, the end item shall be brought in for repair unless another constraint exists. Also, when an NSN is identified for repair and parts are not available, the end item may be removed from the repair list.
20.17.3.5. (Added) Validated data discrepancies. When data discrepancies can be validated, the problem must be documented and reported to the appropriate OPR. When this "dirty data" can be accurately validated, the OPR, typically AFGLSC, must determine what the repair requirement and priority would be for an affected item if the data were valid. If the Scheduler is convinced the NSN should be added to or the quantity increased on the EXPRESS Table, it can be done provided an NSN and/or adequate quantity of lower priority supportable requirements are deleted to offset the repair cost of the added requirements. Conversely, a data discrepancy resulting in a decision to reduce repair requirements or priorities can be addressed by deleting the affected NSN or reducing the quantity during intervention.
20.18. (Added) Supportability Max Item Switch and Quantity ("M" switch). The Scheduler is responsible for setting the Max Item Switch and Max Item Quantity. These settings are used together to manage capacity in the shop by controlling the maximum number of items allowed on the EXPRESS Table. The settings are by specific NSN. CAUTION: Incorrect input(s) may result in erroneous repair drives.
20.18.1 (Added) Supportability Max Item Switch. This is a three-position switch that determines which particular assets (Condition Code "Y", Awaiting Maintenance (AWM), OWO) will be included in the Supportability Max Shop Quantity calculation on this screen and in the Supportability Max Item Quantity calculation on the "Item" view. The selection of "EXPRESS Table," "AWM Pipe," or "Repair Pipe" in the Repair Resource View determines how shop quantity will be capped. Default value is "EXPRESS Table".
20.18.2. (Added) EXPRESS Table. Constrains the number of potential, repairable, supportable

requirements that are loaded to the EXPRESS Table to the quantity placed in the Supportability Max Shop Quantity field for that shop.
20.18.3. (Added) AWM Pipe. Constrains the number of potential, repairable, supportable requirements that are loaded to the EXPRESS Table to the Supportability Max Shop Quantity field less the sum of all items that have Condition Code "Y" or are AWM for that shop.
20.18.4. (Added) Repair Pipe. Constrains the number of potential, repairable, supportable requirements that are loaded to the EXPRESS Table to the Supportability Max Shop Quantity field less the sum of all items that have Condition Code "Y" or are AWM or OWO for that shop.
20.18.5. (Added) Supportability Max Item Quantity. This data field represents maximum items allowed in the shop for the specific item. It depends upon switch setting of "Supportability Max Item Switch" in Repair Resource View. Default value is 99999 (100% unconstrained quantity). The field range is from 0 to 99999.
20.18.5.1. (Added) AFGLSC Recommendations. AFGLSC can recommend changes to the Max Item settings but the Scheduler has the final authority and is ultimately responsible for induction into maintenance.
20.18.6. (Added) Conditions Required for Max Item Switch and Quantity. The Scheduler may only set the Max Item Switch and Quantity if one or more of the circumstances in 20.17.3 (Conditions Required for Manual Intervention) exist.
20.18.6.1. (Added) The Max Item switch and quantity should be used as a last resort to manage capacity in a shop. It is intended to be used short term and not as a continuous filter for requirements.
20.18.7. (Added) Max Item switches and quantities will be reported in the Exchangeable meeting. Corrective action should be taken to help resolve the circumstances behind the use the Max Item switches and quantities. The Scheduler is then responsible to remove the Max Item switch and quantity.
20.18.8. (Added) The exception to use Max Item switch and quantity on a continuous basis is the "AWM Pipe" or "Repair Pipe". CAUTION: Incorrect input(s) may result in erroneous repair drives. The "AWM Pipe" or "Repair Pipe" settings may be used to maintain a constant level of repairs for a specific NSN in a shop. This logic helps to maximize shop efficiency by maintaining a standard OWO balance throughout the shop. The Production Controller will ensure all repair requirements continue to be met when utilizing the "AWM Pipe" and "Repair Pipe" settings. Any repair requirement shortfalls should be discussed in the Exchangeable meeting.
20.19. (Added) Exchangeable Meeting.
20.19.1. (Added) Purpose. The Exchangeable meeting is used to ensure the depot repair process

is on track, seek methods of improvement, and apply the necessary resources to get the job done. It provides the necessary oversight and direction to engage all key players. The meeting enhances communication and ensures that all team members are given the opportunity to identify/solve problems that hinder maintenance in repairing assets. Topics discussed vary based on local conditions but include the mandatory areas specified in this instruction. Roles and responsibilities of Exchangeable meeting key players are outlined below.

20.19.2. (Added) Formal Exchangeables Meetings. Formal Exchangeable meetings will be held monthly. The Group Commander/Director will chair the meeting to facilitate cross flow of problems, solutions, and innovations. The purpose of the formal meeting is to inform the Group Commander/Director of issues impacting the repair cycle that delay or prevent adequate customer support and facilitate communication between functional groups to resolve these issues. The number of formal monthly meetings may vary depending on the number of Squadrons within the Production Group. The Exchangeable meeting focus is found in **Table 20.1**. The Group Commander/Director is responsible for publication of the formal monthly minutes. Constraints that cannot be resolved at the formal monthly meeting shall be elevated to the MXW for resolution.

20.19.3. (Added) The Squadron Chief will chair the informal Exchangeable meeting. No formal minutes are required. Constraints that cannot be resolved at the informal Exchangeable meeting will be addressed at the formal monthly Exchangeable meeting with the Group Commander/Director. Exchangeable meeting focus is found in **Table 20.1**.

Table 20.1. (Added) Exchangeable Meeting Focus.

What to Review	Questions to Ask. Examples listed below
Asset Posture	What is on-hand at field level? Is the Redistribution Order (RDO) an option? What is the serviceable balance? Do we have available "F" condition carcasses? How many items are backordered?
Repair Cycle (Snapshot View)	What's Broken? Where is it? Is somebody fixing it? What are the bottlenecks? What are the leading indicators?
Repair Cycle Dynamics	How fast? How reliable? Right priorities? Resource problems? People problems? Contractor support?

20.19.4. (Added) Exchangeable Meeting Attendees. The mandatory monthly forum will include all people who resolve problems within the depot repair process. The Squadron Commander/Director, AFGLSC personnel, appropriate representatives from Engineering, Contracting Procurement, DLA, and others critical to customer support will participate in these meetings if specific issues demand their attendance. Personnel at other ALCs will FAX or email the status of items for which they are responsible to the affected Squadron Commander/Director. If issues exist, these individuals will participate in the meetings via video-teleconference, speakerphone, etc. The Squadron Commander/Director responsible for the problem item will lead the discussion.
20.19.5. (Added) Roles and Responsibilities in support of the Exchangeable meetings.
20.19.5.1. (Added) The AFGLSC role is to brief the worldwide health of the item. This includes information on the Exchangeable Chart as required. This includes the Asset Posture items listed in Table 20.1 . AFGLSC is responsible for attending the Exchangeable meetings if items being reviewed are under their area of responsibility. AFGLSC is also responsible for any additional information relative to the problem item that is not portrayed on the chart or that requires further explanation. This may involve identifying and correcting data problems involving requirements and asset data that impact EXPRESS. AFGLSC should also be prepared to discuss any procurement issues, availability of carcasses for reclamation or cannibalization, status of repair actions at contractor or other organic locations, etc.
20.19.5.2. (Added) DLA will brief parts-related issues and AWP status.
20.19.5.3. (Added) The Contracting Officer will attend, as necessary, to discuss contracting issues.
20.19.6. (Added) Exchangeable Meeting Discussions. The Squadron Director will lead Exchangeable meeting discussions. The entire team will participate as necessary in the discussion directing efforts at problem resolution. The basic health and status of items will be addressed covering the specifics of what failed and why.
20.19.6.1. (Added) The Top 10 problem items to be briefed will be determined using the EXPRESS Supportability Summary Report. The review will consist of the items in accordance with the Single Prioritization Across Weapon Systems (SPAWS) ranking that have failed. Additional items that cannot be produced may be added to the list.
20.19.6.2. (Added) Workaround for Determining the Top 10. Currently, there is no automated method to have the Supportability Summary Report sort items for multiple shops. An alternate method would be to run the Supportability Summary Report for the entire ALC, eliminate those shops not within the Group Commander/Director purview, and select the Top 10 items in accordance with the SPAWS ranking that have failed.
20.19.6.3. (Added) AFGLSC Recommendations. AFGLSC can recommend an item is included

on the list to be presented but the Squadron Commander/Director has the final authority to determine what is presented.
20.19.6.4. (Added) AWP and Hangar Queens. In addition to the Top 10 items, the meeting will also include a status of parts driving AWP's and all Hangar Queens compiled by DLA. Additional back-up charts should be added as required.
20.19.6.5. (Added) Exchangeable Chart Data (Information may be obtained from Supply Management Analysis Reporting Tool (SMART) or other current command systems).
20.19.6.5.1. (Added) WorldWide (WW) Active Inventory. This is the amount of inventory needed to support all customers (i.e., FMS, other services, and non-capitalized customers). This includes authorized and on-hand levels. Formulas and information sources are:
20.19.6.5.2. (Added) Authorized (WW Inv Auth). $WW\ Inv\ Auth = MICAPs + POS\ Authorized + RSP\ Authorized + WL\ Authorized + CRI\ Estimate$.
20.19.6.5.3. (Added) On-hand (WW Inv OH). $WW\ Inv\ OH = POS\ On-Hand + RSP\ On-hand + Work-In-Process + CSI\ On-hand + CRI\ On-hand + In-transit\ (serviceable\ and\ unserviceable)$.
20.19.6.5.4. (Added) WorldWide MICAPs (MICAP).
20.19.6.5.5. (Added) SPAWS Value. SPAWS is the prioritization method within EXPRESS that merges each of the weapon system priority lists into a single prioritized list across all weapon systems (indicated by rank and support indicator). The Fixer uses this list to make repair induction decisions for a specific NSN to support field-level requirements.
20.19.6.5.6. (Added) Peacetime Operating Stock (POS).
20.19.6.5.7. (Added) Authorized (POS Auth). This is the computed RBL level within Standard Base Supply System (SBSS) or D035K.
20.19.6.5.8. (Added) On-hand (POS OH).
20.19.6.5.9. (Added) Readiness Spares Packages (RSP).
20.19.6.5.10. (Added) Authorized (RSP Auth).
20.19.6.5.11. (Added) On-hand (RSP OH).
20.19.6.5.12. (Added) Net Repair Objective (Net Rep Obj). The repair objective quantity provided by EXPRESS. This quantity is calculated before the supportability module has processed. This figure is obtained from the Working Level and Base Needs report in EXPRESS.
20.19.6.5.13. (Added) Working Level Authorized (WL Auth). Computed by RBL and is the

recommended amount of assets that should be in the Consolidated Serviceable Inventory (CSI) and Work-In-Process (WIP) at any one time to support requirements. These assets are owned by AFGLSC and are located at a depot, contractor facility, or at an off-base storage location. The level can be obtained from the Working Level and Base Needs report in EXPRESS.
20.19.6.5.14. (Added) Consolidated Repairable Inventory Estimated (CRI Est). The amount of unserviceable assets that RBL estimates should be in the retrograde pipeline or available in the warehouse. This information is found in the depot working level file in D035E to EXPRESS.
20.19.6.5.15. (Added) Total Work-In-Process (Total WIP). Shows the status of assets currently in the repair process. Includes any assets in work at another repair location such as a contractor, another service, or another depot. For depot assets, this quantity includes OWO, AWM, and unserviceable materiel in transit to maintenance. While D035K at each depot has visibility of the local WIP balances, only D035A has visibility of assets in WIP at off-base storage locations and at each depot. Total of the following balances: WIP assets (condition code M) at the depots, O/P code 09; WIP assets (condition code M) at repair contractors or other services, O/P code A; and unserviceable assets in transit to maintenance (condition code Y), O/P code 09.
20.19.6.5.16. (Added) Consolidated Serviceable Inventory On-Hand (CSI OH). The total of the following balances provided by D035A: Serviceable assets (condition code A and Z), O/P code 09 stored at a depot, (Condition code B and C assets are rolled up in the "A" quantity,); serviceable assets (condition code A) stored at off-base storage locations, O/P A; and serviceable assets (condition code A) stored at repair contractor locations, O/P code A.
20.19.6.5.17. (Added) Consolidated Repairable Inventory On-Hand (CRI OH). Total of the following quantities are obtained from D035A: Unserviceable materiel (condition code D, E, F, G, J, K, L, Q, and R) at a depot, O/P 09; unserviceable materiel (condition code D, E, F, G, J, K, L, Q, and R) at an off base storage location (includes contractor and other service storage locations), O/P A.
20.19.6.5.18. (Added) Unserviceable In-transit (In-transit). Amount of unserviceable materiel being returned from retail customers. Provided by D035C (HDFA screen): Unserviceable In-transit are O/P 01 and HK (INTRANSIT UNS).
20.19.6.5.19. (Added) Monthly Demand Rate (MDR). Production is concerned with the SCM wholesale repair requirement versus the retail demand rate generated by CSAG-S retail customers.
20.19.6.5.20. (Added) Retention Authorized (Retention Auth). The maximum amount of assets AFGLSC is authorized to have in their inventory.
20.19.6.5.21. (Added) Local Work-In-Process (Local WIP). The amount of assets in the repair process at the local ALC. This balance is obtained from D035A as condition code M, O/P 09.
20.19.6.5.22. (Added) Additional information. The following information should be considered

when building the Exchangeable production chart.
20.19.6.5.22.1. (Added) Procurement Due-Ins. Information concerning procurement due-ins is not reflected on this chart because this chart displays the “current” health of the item not “future” health. AFGLSC should be prepared to discuss any procurement issues or pending buys.
20.19.6.5.23. (Added) Exchangeable Production Chart Overall Item Rating. Maintenance will color-code the overall rating of the item green, yellow, or red as follows: Green means item has no MICAPs and all individual ratings are green. Yellow means the item has no MICAPs and one or more of the individual items are yellow. Red means the item has one or more MICAPs and/or one or more of the individual items are red. See Fig. 20.3. Sample Exchangeable Production Meeting Chart .
20.19.6.5.23.1. (Added) Overall Equipment Rating. Maintenance independently rates each critical piece of equipment. Green indicates adequate equipment to handle the projected workload is available and is in serviceable condition. Yellow indicates adequate equipment is not available but an acceptable plan is in place (i.e. equipment is down for routine maintenance, needs minor repair, or scheduled for routine maintenance and a workaround exists). Red indicates that adequate equipment is not available or equipment is down for maintenance for an extended period of time and no workaround exists. Individual equipment ratings will be rolled up to a composite equipment color-code rating. Items with any critical equipment having a color-coded rating of red or yellow will have the same overall equipment rating.
20.19.6.5.23.2. (Added) Overall Personnel Rating. Maintenance rates personnel. Green indicates that sufficient personnel are available to produce full requirements. Yellow indicates personnel are available to produce critical areas of MICAP and RSP but some requirements (POS and/or CSI) cannot be filled. Yellow also indicates requirements can be met but overtime rate exceeds sustainable levels. Red indicates sufficient personnel are not available to fulfill requirements for MICAP or RSP items or when capacity is used up for further repairs. Personnel status will remain red until additional hours are assigned or become available through completed repairs.
20.19.6.5.23.3. (Added) Overall Flow Day Rating. Maintenance rates flow days. Green indicates the item is produced in less than or equal to the standard flow days. Red is assigned to items produced with flow days greater than the standard. Standard Shop Flow Days will be calculated and reviewed in accordance with AFMCI 21-105, <i>Depot Maintenance Work Measurement</i> . The Standard Shop Flow Days are input into G019C. Actual Shop Flow Days will be obtained from the appropriate maintenance system.
20.19.6.5.23.4. (Added) Overall Consolidated Repairable Inventory Rating. AFGLSC validates CRI inventory. Green is assigned if carcasses are on hand. Green is also assigned if RBL identified CRI levels of zero. Red is assigned when carcasses are not available.
20.19.6.5.23.5. (Added) Overall Parts Rating. Maintenance rates overall components. Green is assigned to items with parts on hand to do the EXPRESS driven repairs. Red is assigned if parts are on backorder and not available to support RDD. The D035K system is used for access to

estimated delivery dates.

20.19.6.5.23.6. **(Added)** Overall Funds Rating. Green indicates funding is available and production is not impacted. Yellow indicates funds are available to cover the critical areas of MICAP and Joint Chiefs of Staff (JCS) projects but funding lacks capability to cover full requirements. Red is assigned when lack of funding is preventing the MICAP or JCS item from being brought into repair.

Figure 20.3. (Added) Sample Exchangeable Production Meeting Chart

EXPRESS		Bypass: 0		Exchangeable Problem Item Chart		1306-00-162-8143	
SPT	0	Carcass: 44		RED		Supervisor:	Mark Cowart
Failed	76	Hours: 0		POWER SUPPLY		Scheduler:	Beverly Styes
		Funds: 0		PDN: 42201A		PM:	Windal Proctor
		Parts: 32		RCC: MIBR9F		IM:	Sue Underwood
				Date: 31-Mar-10		Planner:	Katherine Stew

Total Auth	Total OH	Priority SPRS	MICAP	RSP Auth / OH	POS Auth / OH	W/L Auth	Net Rep Obj
54	87	0	0	0	34	1	76

Serv	4	Total WIP	15	Reps O/H	32	Other Reps	36	Other assets	0
RSP	0	Organic OWO	8	AWP F	0	Retro	0	DIFM	0
POS	1	Cont OWO	0	F, K, R, at WR	32	Q Cond	0	Surplus I & S	0
Z Cond	3	Y Cond	7			Other	0		
A Cond	0					F, K, R, at other ALC's	0		
Intransit	0					AWP G	36		

Equipment	G	Diod					
Facilities	G	R					
CRI	G						
Parts	R						
Personnel	G						

SHIFTS		1	
Flow Days		G	
AWM	AWP	Actual	Standard
274.0	843.1	-222.2	23

WR-ALC / Production History / Forecast												MTD
	Jun08	Jul08	Aug08	Sep08	Oct08	Nov08	Dec08	Jan09	Feb09	Mar09	Apr09	
Prod	7	3	5	2	4	10	6	4	8	16		
Target	14	5	10	9	15	16	9	9	10	10	23	
B/O's	36	38	43	62	76	65	60	71	86	79		
MDR	7.7	7.7	7.7	7.7	2.7	2.7	2.7	9.3	9.3	9.3		
OWO	7	9	7	11	21	13	4	5	5	11		
AWP	46	47	47	47	46	49	52	53	51	36		
RO	34	34	40	40	40	19	19	19	34	34		

20.20. (Added) Job Routing.

20.20.1. **(Added)** The decision to Job Route/Non Job Route will be made by the SPO/SPM or AFGLSC, as appropriate, working with the MXW and DLA. Normal practice is for an unserviceable asset to be turned into supply in exchange for an available serviceable asset. Consequently, job routed repair is not authorized if a serviceable asset is available from supply in the configuration required. All conversions from job-routed to non-job routed should begin budget lead-time away for anticipated cost changes to the CSAG-MD/CSAG-S. If circumstances still require job routing, approval must be obtained from the Program Office.

Such action must be reported to supply in order for supply to record accurately the true requirements for stockage. (See AFMC Supplement to AFI 20-110 for NWRM job routing guidance.)
20.20.2. (Added) Job Routed Repair. Job routed repair occurs when a recoverable component is found to be unserviceable during the overhaul, the item is removed, repaired/reconditioned, and reinstalled on the same end item.
20.20.3. (Added) Non Job Routed Repair. Non job routed repair occurs when an unserviceable item is removed and replaced with a serviceable item from supply. A non-routing process is a strictly remove and replace operation.
20.21. (Added) Procedures for Job Routing (As approved by the SPO/SPM or AFGLSC, as appropriate).
20.21.1. (Added) The appropriate WCDs will be developed and used as required by Chapter 19. All job-routed repairs are to be input and tracked through the repair process via the appropriate data system.
20.22. (Added) Procedures for Non-job Routing.
20.22.1. (Added) Shop replaceable units (SRUs) removed from line replaceable units should be turned into DLA and a serviceable asset used to fill the hole on the end item. Due in from maintenance/due-out to maintenance (DIFM/DOTM) procedures will be used to maintain financial/material accountability. If the SPO/SPM or AFGLSC (whoever manages the item) approves, job-routing will be permitted if SRUs are not available.
20.23. (Added) Process Routing.
20.23.1. (Added) Process routing which consists of forwarding an item to a process shop is an integral part of the overall repair effort but isn't considered a job route. A process shop is defined as a DM function that provides conditioning support on component assemblies and materials, or essential support services for end items being repaired by other DM organizations. The following are examples of candidates for process routing: cleaning, plating, heat treat, welding, battery servicing, grinding, machining, non-destructive inspections (NDIs), check/test, and minor maintenance (Not to Exceed Level Three Field Repairs).
20.24. (Added) Materiel Management.
20.24.1. (Added) Wholesale Requisition Process. Customer initiated requisitions are received into D035A, the system checks asset availability, and either releases or backorders the requisition. (Reference document AFMAN 23-110, Vol. 3, Part 3.)
20.24.2. (Added) Requisitions. Requisitions, both programmed and non-programmed, originate from several sources through their respective data systems. They are as follows:

20.24.2.1. (Added) Base level Requisitions. Base level customers (operational commands) submit requisitions through SBSS (D002A).
20.24.2.2. (Added) Depot level Requisitions. Depot level customers submit orders into ABOM/NIMMS which passes to D035K and creates a backorder for requisition action. Requisition passes to the appropriate SOS.
20.24.2.3. (Added) FMS/Other Service Requisitions. FMS and other Service customers submit requisitions through their respective host system.
20.24.2.4. (Added) Contractor Requisitions. Contractor customers submit requisitions through the Commercial Asset Visibility Air Force (CAVAF) system.
20.24.3. (Added) Organic Repair Asset Visibility. AFGLSC will monitor D035A to ensure that backorders are being pre-positioned and released correctly. D035A provides asset information on assets going into and out of maintenance and assets in work.
20.24.4. (Added) Contract Repair Asset Visibility. The CAVAF system passes asset records to D035A through the D375 interface for a contractor location by condition code.
20.24.5. (Added) Asset Balances. The CAVAF system provides asset balances on contractor assets.
20.24.6. (Added) RBL Depot Level. The RBL Depot Level is made up of the retrograde pipeline and the working level. The retrograde pipeline addresses the time expected for an asset to be returned from base supply. The working level can be broken into two parts, the repair pipeline and safety level. The repair pipeline addresses the time expected to repair an item.
20.24.7. (Added) Automated Release of Backorders. EXPRESS determines the prioritization logic for release of backorders based on multiple factors including flying hours, bases levels vs. assets, etc.
20.25. (Added) EXPRESS Funds Application.
20.25.1. (Added) Purpose. This guidance provides direction for funds application of Work Authority (WA) as it relates to EXPRESS funding execution.
20.25.2. (Added) There is no ownership of the repair work authority as AFGLSC WA is held in central pool by specific SOS. The central pool is maintained and executed at Group level to allow for funding on demand to support the repair on demand process. This process focuses on the reparable assets managed by the AFGLSC 448 SCMW. These items can be identified by a three position Expendability Repairability Recoverability Code designator of XD1 or XD2 or the one position alpha designator of C or T. Items are also identified as budget code "8" items.
20.25.3. (Added) The AFGLSC Group FM office for each SOS is responsible for providing

timely funding to allow daily EXPRESS execution via J025A, <i>Automated Project Order System Project Order (PO)</i> .
20.25.4. (Added) The AFGLSC Group Wholesale Funds Manager(s) representative from the SOS Group FM office will address funding issues at Exchangeable meetings for their SOS. They will communicate with AFGLSC 448 SCMW/FM prior to the meetings to obtain the latest funding information.
20.26. (Added) Organic Workload Funding Execution Process.
20.26.1. (Added) The EXPRESS system determines the repair execution requirements for organic programmed repair items (Exchangeables) and identifies them by Sub Group Master (SGM) and by weighted repair cost. On a daily basis EXPRESS triggers the PO funding process in J025A. For each Source of Supply (SOS)/Source of Repair (SOR) combination, J025A generates an on-line PO using data from EXPRESS and the G004L, <i>Job Order Production Master System</i> . J025A then notifies EXPRESS when the PO has been funded and accepted or that funding was not completed. CSAG-MD will not put assets into work without a funded PO.
20.26.2. (Added) EXPRESS burn rates.
20.26.2.1. (Added) The EXPRESS supportability module for each SOR contains a separate burn rate for each SOS having repair at that SOR. The burn rates tell EXPRESS supportability module how much WA is available from each SOS to support their daily repair requirements. The EXPRESS burn rate is SOS specific rather than shop specific. The AFGLSC Group Wholesale Funds Manager(s) is responsible for the SOS repair funding burn rate data and to ensure burn rate data has been properly entered into EXPRESS. The burn rate data consists of four elements that are required to calculate the EXPRESS burn rate: SOS Checkbook, Days Remaining, Funding K-factor (%), and Percent of Checkbook. These values can be changed as needed.
20.26.2.2. (Added) SOS Checkbook is the uncommitted WA balance for a particular SOS. EXPRESS Depot Funding will receive each SOS's uncommitted WA balance for MPC 1Q01 from J025A daily.
20.26.2.3. (Added) Days Remaining identifies the remaining workdays in FY or for a specific number of days the applicable funding should apply. The AFGLSC Group Wholesale Funds Manager(s) work(s) with the CSAG-MD Acceptor at each SOR to identify the remaining workdays.
20.26.2.4. (Added) Percent of Checkbook is the percent of uncommitted WA balance that will be applied for an SOS's requirements at a particular SOR.
20.26.2.5. (Added) Funding K-factor (%) allows the daily burn rate to be exceeded by a predetermined percent. If SOS burn rate is calculated to \$500 for a given day, and the SOS selected 150% for the K factor, the burn rate will equal \$750. The EXPRESS supportability module would use \$750 as the burn rate for this SOS rather than \$500. The K-factor helps with

situations where an item has an extremely high unit repair cost or the requirement on a given day exceeds the burn rate because of increased demands.
20.26.3. (Added) Burn rate calculation.
20.26.3.1. (Added) EXPRESS calculates the SOS burn rates by multiplying the SOS's uncommitted WA balance by the SOS's percent assigned to that SOR then divides by remaining work days and multiplies this value by the K-factor %. $\text{SOS burn rate} = \text{K factor} \times [(\text{uncommitted WA} \times \% \text{ of WA}) / \text{days remaining}]$.
20.26.4. (Added) EXPRESS PO Processing.
20.26.4.1. (Added) J025A edits the information it receives from the EXPRESS file. Using the EXPRESS data and information from G004L, J025A will automatically build/initiate a PO and transmit to the Initiator/Approver (AFGLSC Group Wholesale Funds Manager) at appropriate SOS. J025A cannot attempt to build a PO for the requirement if data is missing or has invalid characters for: the Production Control Number, SGM, Quantity, Production Section Scheduling Designator (PSSD) and Fund Classification Reference Number (FCRN). Care must be taken to ensure this data is properly entered in EXPRESS/G004L.
20.26.4.2. (Added) The Initiator/Approver ensures funding is available and the proper funds for requirement are being utilized. Initiator/Approver initiates and/or approves PO on-line in J025A. Approver then transmits the PO on-line to the CSAG-MD Acceptor. Once Acceptor signs PO, notification is returned to EXPRESS stating funds application is complete. Record of the PO is also forwarded to DIFMS/FIT to update the maintenance financial records.
20.26.4.3. (Added) Prior to acceptance, if the Acceptor rejects the PO, it is passed back to the Approver and back to the Initiator with comments for appropriate action(s). Subject to required actions, funding will not be applied for induction needs for the particular funding stream (Program Control Number/FCRN) in question that day.
20.26.5. (Added) PO acceptance.
20.26.5.1. (Added) There is no partial approval/acceptance of a PO. After supportability and subject to maintenance manual intervention, should total dollar value on PO exceed total available WA, the Initiator will reduce the requirement to the available funding. Initiator can delete any or all funding streams from the PO.
20.26.5.2. (Added) The CSAG-MD Acceptor's on-line signature on the PO indicates CSAG-MD is accepting SOS's offer (the workload). This process allows the CSAG-MD to incur an expense on behalf of the AFGLSC.
20.26.6. (Added) PO Funds Application Time Limits.
20.26.6.1. (Added) There is a two hour window (1330-1530 Eastern Time) to build the PO,

approve the funds, accept the PO, and notify EXPRESS of the funded or unfunded requirements.
20.26.6.2. (Added) The Initiator is responsible for oversight of the acceptance process. Initiator is required to monitor the EXPRESS funding process and contact the Acceptor when the PO amendments are not being processed in a timely manner. They will ensure the approval, certification, and acceptance process is completed during the two hour window. If completion cannot be accomplished, the Initiator/Approver/Certifier/Acceptor in J025A may request to extend open the J025A EXPRESS window.
20.26.6.3. (Added) Upon completion of funding process, EXPRESS reformats the funded J025A file and sends to D035K which begins the movement of reparable carcasses to shops for induction and repair to commence.
20.26.7. (Added) Contingency Plan.
20.26.7.1. (Added) If J025A is down, the CSAG-MD Acceptor will sign paper copy and return to the initiator. The Initiator will hold the paper copy until J025A comes back on-line.
20.26.7.2. (Added) J025A provides a PO amendment number that G004L needs to load the information into the maintenance systems. Amendment numbers are not available until the Initiator is able to input the POs into J025A.
<i>20C-Production Support for Aircraft and Missile Repair</i>
20.27. (Added) Purpose. This section outlines the DM production support philosophy and policies required to effectively operate and manage the aircraft/missile repair process.
20.27.1. (Added) Aircraft/Missile management will implement an automated aircraft/missile production operation-level schedule. This schedule must be available to both production and support personnel. A tail/serial number-specific production schedule (with its critical path) provides the focus for synchronizing logistics support and direct labor. The goal for all process support players is to provide the supporting resources to the mechanic prior to the operation start date. Aircraft/Missile management must not shift major jobs in the schedule for manipulating short term efficiency of direct labor. Movement of operations within the Aircraft ten day windows will remain the prerogative of the Tail Team (see paragraph 20.27.7). Adherence to schedule will be more critical as flow days are reduced. Independent, uncoordinated manipulation of the schedules would de-synchronize the in-work major aircraft/missile tasks from their support logistics. Unexpected events will always occur and may require changes to the schedule. Unexpected events are more readily accommodated when the majority of tasks are accomplished according to schedule. The schedule emanates from production's annual (fiscal year) work plan with the number of aircraft/missiles by work package, becomes more specific by MDS level of detail, and is most specific with the schedule by tail number for a particular aircraft or serial number for a particular missile. This schedule resides in the aircraft/missile repair scheduling system that captures operations by start date within the network and provides project management capability and visibility to all.

20.27.2. (Added) Aircraft/Missile management will man-load to the schedule on multiple shifts within existing constraints, if required. This will result in fewer aircraft/missiles in work at one time but these major end-items will flow through the depot at higher velocities. Aircraft labor and logistic support will be highly focused on fewer aircraft. By reducing the number of aircraft on-station, thereby increasing the number available in the field, an increasing capacity arises at the ALC.
20.27.3. (Added) The first line supervisor assigns work and supervises mechanics performing tasks on the aircraft/missile. Specialized support personnel provide most of the mechanic's material and other support requirements.
20.27.4. (Added) The Pre-Production Section (PPS) performs strategic planning, master scheduling, and analytical activities needed to ensure production requirements are fully supportable prior to aircraft/missile induction. Activities include customer requirements analysis, long- to short-range production planning (supportability reviews), master production scheduling, capacity and material requirements planning, and contingency (what-if) management.
20.27.5. (Added) The Production Support Section (PSS) is the mechanic's one-stop support providing most resources prior to need date for availability at the operation start and therefore not distracting direct labor away from their aircraft repair tasks. As a result of increased support to the mechanic by other sources, the requirement for the mechanic to leave the aircraft/missile to obtain materials to perform tasking is reduced.
20.27.6. (Added) Proper synchronization of available back shop repair capacity (supporting off-aircraft/missile repair items) to the aircraft/missile schedule is a necessary pre-condition to reducing the number of aircraft/missile flow days. The backshops will integrate the aircraft/missile schedule requirements into their scheduling activities. This means aircraft/missile production must be able to prioritize their backshop requirements as per the aircraft production schedule. These priorities must then be de-conflicted if multiple aircraft/missile or exchangeables customers require the same backshop capacity at the same time. The synchronization team consists of a Schedule execution representative (Sync Rep), usually a Scheduler from the PSS along with Exchangeable back shop representative(s). The team is responsible to resolve these conflicting priorities and expedite output to schedule. These representatives will meet as required to work the "hot item" aircraft/missile priorities from an ALC perspective when conflicting demands for backshop capacity exist. De-conflicting competing customer requirements for backshop capacity can only be done if the Sync Rep works closely with the backshops. Accordingly, the backshop Planners are able to work quickly and collaboratively to properly load available backshop capacity. Priorities worked in the backshops must be synchronized to the aircraft/missile schedule, if the integrity of the aircraft/missile production schedule is to be maintained, and support provided when needed. Regular high-level reviews occur to resolve conflicts between aircraft requirements and back shop capacity.
20.27.7. (Added) An automated program management scheduling system (e.g., PDMSS) is the core system within the aircraft/missile repair process. Visibility of schedule, resources required by operation start dates, operations by type required, funding, etc., are provided to the aircraft

Tail Team/missile Product Focus Team (PFT) and process support personnel in the industrial logistics pipeline so that all members synchronize their efforts to the aircraft/missile schedule. The Scheduler, Production Support Technician (PST), and aircraft/missile First Line Supervisor form the aircraft-specific tail support team and the missile specific PFT, which meets regularly to assure support in “rolling ten day” windows. A Planner is available for support to the Tail Team/PFT as needed. The scheduling system permits simulation of resources by type against the schedule and has a report generation or query features for tailored reports.

20.27.8. **(Added)** The industrial support process, from requirement identification by the SPO/SPM and MAJCOMs through completion of programmed, unprogrammed, modification, and unpredictable depot level maintenance, is very complex. Each requirement has its own work package consisting of tasks, required resources and schedule. To this end, planning and support activities are highly integrated within the process. The process begins before aircraft/missile arrival, continues during depot repair or modification, up through the departure for home station, and additionally, for a period after actual departure (cost roll-ups, JON work completion/transfer, JON closure, records closeouts, etc.). The activities include direct and indirect production support, backshop support, system program or integrated weapon system management support, supply support, production support, and FM support.

20.28. (Added) Organizations and Functions.

20.28.1. (Added) Production Support Flight Functions:

20.28.1.1. **(Added)** Validate requirements, plan and program resources for requirements, develop work packages, evaluate work specifications, and load resources to the aircraft/missile induction schedule.

20.28.1.2. **(Added)** Conduct daily supportability posture review to ensure resource availability by type for each operation’s start date.

20.28.1.3. **(Added)** Order and coordinate delivery of material, Aerospace Ground Equipment (AGE), etc. for tail/serial number operations.

20.28.1.4. **(Added)** Maintain List of Material (LOM) and DM repair BOM.

20.28.1.5. **(Added)** Establish metrics and evaluate procedures to inform the Squadron Commander/Director in knowing the status of production.

20.29. (Added) Pre-Production Section (PPS) Functions.

20.29.1. **(Added)** P&A Office: The P&A Office provides the Production Support Flight Chief with staff support functions, to include special projects and program management, quality control, and training. Specific functions include:

20.29.1.1. **(Added)** Provide support and coordination for meetings and briefings.

20.29.1.2. (Added) Develop and maintain operating procedures.
20.29.1.3. (Added) Monitor overview, introductory and on-going training.
20.29.1.4. (Added) Perform internal process reviews and monitor practices to ensure compliance with established procedures and practices.
20.29.1.5. (Added) Measure process compliance and evaluate business metrics.
20.29.1.6. (Added) Analyze trends.
20.29.1.7. (Added) Evaluate workload progress.
20.29.1.8. (Added) Recommend changes to process, personnel position descriptions and procedures, equipment and facility, information systems, and training.
20.29.1.9. (Added) Track Quality and Material Deficiency Reports (Q/MDR)/credits, warranty and desired results.
20.29.2. (Added) Planning Functions: The Planner will be involved with the SPO/SPM, maintenance work loaders, financial managers (financial analysis), backshop, contracting, engineering, and supply organizations to ensure complete visibility of present and future aircraft repair (PDM, MOD and UDLM) and missile repair requirements. Specific functions include:
20.29.2.1. (Added) Estimate man-hours and resources to perform PDM MODs, and UDLM statements of work (SOWs).
20.29.2.2. (Added) Reconcile similarities between PDM and MOD work packages.
20.29.2.3. (Added) Update fixed price worksheet; reconcile and issue fixed price sheets.
20.29.2.4. (Added) Develop master routing plan.
20.29.2.5. (Added) Develop work packages.
20.29.2.6. (Added) Integrate TOs, engineering changes and mechanic input into work packages.
20.29.2.7. (Added) Develop BOM by PDM operation.
20.29.2.8. (Added) Merge Tail Serial Number Scrub List to BOM for UDLM operation.
20.29.2.9. (Added) Adjust BOM as necessary.
20.29.2.10. (Added) Adjust aircraft/missile schedule by major job.

20.29.2.11. (Added) Participate in the supportability reviews.
20.29.2.12. (Added) Update BOM from AMR for fiscal year LOM.
20.29.2.13. (Added) Load workload package.
20.29.2.14. (Added) Adjust operation schedule.
20.29.2.15. (Added) Draft and develop planned labor application.
20.29.2.16. (Added) Compare equipment to work specification.
20.29.2.17. (Added) Compare facilities to work specifications.
20.29.2.18. (Added) Review aircraft/missile records and pre-existing problems. Participate in Pre-Induction conference.
20.29.3. (Added) Master Scheduler Functions:
20.29.3.1. (Added) Approve FY work plan for aircraft/missile induction, carry-out, flow days and shifts.
20.29.3.2. (Added) Review system schedule impacts of MODs, UDLM, and new or changed requirements.
20.29.3.3. (Added) Review resource supportability by MDS per fiscal year.
20.29.3.4. (Added) Adjust schedule per facility or skill constraints.
20.29.3.5. (Added) Establish aircraft/missile schedule.
20.29.3.6. (Added) Develop aircraft/missile input/output schedule.
20.29.3.7. (Added) Develop facility utilization plan.
20.29.3.8. (Added) Confirm incoming tail/serial number and configuration.
20.29.3.9. (Added) Chair Pre-Induction Conference.
20.30. (Added) Production Support Section (PSS) Functions.
20.30.1. (Added) Scheduler Functions: The Aircraft/Missile Scheduler and the Scheduler designated as the Synchronization Representative performs Schedule Execution functions. The Aircraft/Missile Scheduler is a member of the Tail Team/PFT and focuses on tail/serial number scheduling as the aircraft/missile undergoes PDM/UDLM/MOD. The Synchronization

Representative focuses on routed items. Both support the aircraft /missile mechanic IAW the operation schedule. Specific functions include:
20.30.1.1. (Added) Review aircraft/missile history.
20.30.1.2. (Added) Route from Pre-Dock and Dock; track all routed items.
20.30.1.3. (Added) Verify PDM/UDLM work packages are in the appropriate production scheduling system, and ensure JON opened in G004L.
20.30.1.4. (Added) Synchronize support to schedule.
20.30.1.5. (Added) Manage WCDs and issue to Production Supervisor for distribution to mechanics.
20.30.1.6. (Added) Verify operation completion to include temporary JONs.
20.30.1.7. (Added) Ensure JON is closed in G004L and input departure notice in the appropriate production scheduling system.
20.30.1.8. (Added) Chair the Tail Team/PFT (includes the First Line Supervisor, PST, and as needed, the Planner) meeting to perform a 10 day “forward look” of operations IAW with the critical path schedule. The evaluation involves reviewing skills, parts, tools, equipment, etc. for each operation.
20.30.2. (Added) Production Support Technician (PST) Functions: The PST performs research, direct-line ordering, turn-in processes, file maintenance of backorders, management of FOM, etc. The PST is a member of the Tail Team that focuses on material coordination as the aircraft undergoes PDM/UDLM/MOD. Specific functions include:
20.30.2.1. (Added) Perform direct-line ordering.
20.30.2.2. (Added) Monitor backorder status.
20.30.2.3. (Added) Process turn-ins of Aircraft/missile-specific Due In From Maintenance (DIFM)/Due Out To Maintenance (DOTM) and verify turn-in of unused parts.
20.30.2.4. (Added) Manage and track FOM and routed items.
20.30.2.5. (Added) Perform ten day forward look for resource support against the critical path.
20.30.2.6. (Added) Obtain blueprint drawings for mechanics as required.
20.30.2.7. (Added) Process and track cannibalization actions in the Production Scheduling System.

20.30.2.8. (Added) Coordinate delivery of kits/packages and available resources based upon aircraft/missile schedule.
20.30.3. (Added) Synchronization Team Function: The Synchronization Team's focus is on the aircraft/missile tail/serial number schedule, the RDD of a given operation, and the backshops' Estimated Delivery Date (EDD). The Synchronization Team has representatives from the backshops and from each aircraft/missile squadron for backshop for conflict resolution. Specific functions include:
20.30.3.1. (Added) Track and expedite manufacturing and repair work done in the backshops.
20.30.3.2. (Added) Track assets throughout the production cycle.
20.30.3.3. (Added) Coordinate with Scheduler upon failure of supportability to reschedule operation.
20.31. (Added) Industrial Support to Aircraft and Missile Repair Processes.
20.31.1. (Added) Develop, Plan and Refine Requirements.
20.31.1.1. (Added) Aircraft and Missile Requirements (AMR). The AMR process is used to develop, review, validate and approve depot level maintenance and repair for aircraft and missile systems. Within the AMR Process is the Engineering Requirements Review Process (ERRP), Bill of Work (BOW) Process, and the Requirements Supportability Process. These processes are documented in the Logistics Requirements Determination Process (LRDP) Guide and Handbook which can be located on the Centralized Asset Management (CAM) CoP: https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=23211
20.31.1.2. (Added) The ERRP drives the generation of a new engineering requirement from conception through approval by providing justification with fully developed supportability elements. In addition, it directs a review of existing scheduled maintenance tasks for validity.
20.31.1.3. (Added) The BOW documents all scheduled maintenance tasks contained in the Work Spec and Brochure with the following elements: step-by-step work procedures, parts listings, hazardous materials, special tooling, non-issued personal protective equipment (PPE), support equipment, and production skills needed to perform the task. Additionally, it includes the aircraft/missile maintenance network (critical path), conversion of the step-by-step work procedures into operations to accomplish tasks, and updates to the list of materials in their respective data systems.
20.31.1.4. (Added) The Requirements Supportability Process reviews and assesses the supportability for individual tasks (scheduled maintenance tasks) in the AMR Work Spec, AMR Brochure, or Bill of Work. It determines the program year the task would be supportable and added to the Work Spec and AMR Brochure.

20.31.1.5. **(Added)** Programmed Depot Maintenance (PDM): PDM requirements identified by the using command and system engineers are compiled as work specifications in a Work Specification Document (Work Spec). Requirements may include programmed upgrades, analytical condition inspections, and scheduled preventive maintenance. Aircraft/missile MDS, and the age and condition of the aircraft are considered when determining PDM requirements. The PDM requirements are presented to the SPO/SPM which compiles the requirements into a Work Spec.

20.31.1.6. **(Added)** The SPO/SPM ES and Engineer will develop a LOM required for new work by reviewing TOs, drawings, or other engineering data. The SPO/SPM ES will review the list of “new” material (not previously loaded against a PDM or other depot task), to verify that all have a NSN assigned. This includes NSNs for material, repair parts, special tools, hazardous materials (HAZMAT), etc. When complete, this list will become the fully indented engineering BOM or MOD kit inventory consisting of component parts, quantity per unit, and parent component relationships required to produce an end item. The SPO/SPM will send the developed list to the AFGLSC, DLA and IPV. The AFGLSC, DLA and IPV, in turn, will perform a preliminary supportability review and provide risk assessment to SPO/SPM.

20.31.1.7. **(Added)** The SPO/SPM will initiate the required action to assign NSNs to those items required by the Work Spec that do not have an NSN assigned. Non-Stock Listed (NSL) items identified later in the supportability process, either before or after the aircraft/missile has arrived on-station and is in-work, can be referred back to the ES for necessary actions to stock list the item.

20.31.1.8. **(Added)** The SPO/SPM will coordinate the development of the Work Spec with maintenance. The validated Work Spec will be available 1 April by accessing Centralized Access for Data Exchange (CAFDEx) or contacting the SPO/SPM. The Production Support Flight will use the validated Work Spec to perform a Rough Order of Magnitude (ROM) (by labor category) of work, to include any differences if the new Work Spec represents a change to the current (already in-work) PDM package. The Planner will use the data provided in the Work Spec, TO(s), and experience from first article to determine the labor hours, equipment, facilities, material, and special tooling required to accomplish the SOW. The Planner will correlate the specified work with required skill codes, identify which tasks have material associated, identify facility requirements for each task, correlate required skills with hours, and flow the work in a logical sequence.

20.31.1.9. **(Added)** The Collaborative Functional Team (see Chapter 13 of the LRDP Handbook for the team members) during the ERRP will estimate the physical resources required to accomplish the Work Spec. For aircraft, the physical resources’ estimates may include ramp and hangar space, engine-run test cells, compass row, co-located and assigned industrial (i.e., backshop) capability, etc., to the point that tasks and physical resource requirements are correlated. The team will identify from the Work Spec repair requirements that should logically be performed by local, ALC-assigned industrial resources, to include correlating the specific task with a particular ALC industrial capability. The cost of utilizing local ALC industrial capability is included in the ROM cost projected by the Planner for performing the Work Spec. This pertains to those items designated for local manufacture, and for off-aircraft/missile

repair/process repair routes. The Planner will return the estimate reflecting the man-hours and occurrence factors required to accomplish the tasks defined within the Work Spec. The SPO/SPM will input into CAFDEx AMR Module unless role has been delegated to maintenance.

20.31.1.10. **(Added)** The SPO/SPM will review/negotiate the hours and occurrence factors provided by maintenance; SPO/SPM will make changes to hours and occurrence factors in the CAFDEx AMR Module as necessary unless role has been delegated to maintenance. The SPO/SPM will ensure all material for the Work Spec is stock listed, and supportable. The SPO/SPM ES will confirm identified items have current, valid contracts, or can be locally manufactured to support the workload. The Equipment Specialist should treat PDM material supportability in the same way as MOD/TCTO material supportability, such that it is programmed, budgeted, and available.

20.31.1.11. **(Added)** The Work Spec and AMR Brochure is published on 15 November for the upcoming fiscal year and is available by accessing CAFDEx or contacting the SPO/SPM.

20.31.1.12. **(Added)** The SPO/SPM will complete development of the AMR Brochure and Work Spec by Program Year. The AMR Brochure includes tasks, approved hours, occurrence factors, and number of aircraft/missiles scheduled to work per year by MDS; the Work Spec includes tasks only. The AMR process is documented in the Logistics Requirements Determination Process (LRDP) Guide which can be located on the CAM CoP: <https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=23211>

20.32. (Added) Develop and Approve Fiscal Year Plan.

20.32.1. **(Added)** The Planner will perform analyses of the workload defined by the approved Work Spec to establish the optimal flow-plan of aircraft/missile through the available depot facilities in accordance with known PDM and MOD requirements. Also included in this analysis will be historical UDLM requirements for a given fiscal year. The results of this analysis will determine the quantity of aircraft/missile maintenance can accommodate for the FY along with the required number of flowdays.

20.32.2. **(Added)** The Planner/Master Scheduler will develop the fiscal year Input-Output plan. The analysis will define facility and workload variables that may impact the negotiated delivery date(s). The result of this analysis will reflect the required sequencing of aircraft/missile input to the depot by arrival date (draft Input-Output schedule). The developed draft Input-Output schedule forms the basis for any future analysis for proposed additional workloads (e.g., UDLM/"drop-in") for the given FY plus provides the foundation for development of the Master Plan that grows in specificity as a tail/serial-number-specific network. Simulation(s)/analysis of the developed Work Spec is critical to accurately determining the annual schedule, as well as assessing the impact of any future changes to negotiated delivery dates, inputs, etc.

20.32.3. **(Added)** The Master Scheduler and Planner will review the draft Input-Output schedule, perform "rough-cut capacity planning", and verify that available facilities will accommodate the planned sequencing of aircraft through available PDM/MOD production resources. The Master Scheduler and Planner will identify any conflicts, recommend solutions

in the form of a revised Input-Output schedule, and forward it to the SPO/SPM. The SPO/SPM will distribute the developed Input-Output schedule to the MAJCOMs so they know when to send aircraft/missile to the depot.

20.33. (Added) Validate Resources by Task.

20.33.1. **(Added)** The Planner as part of the BOW will use appropriate sources (e.g., D043, FedLog, Engineer's LOM, etc.) to identify material required to perform each task specified in the WCD, and transform the engineered LOM into a Planning BOM by MDS, detailed to the operation level. The Planner will link the material identified on the engineered LOM to each planned operation, coded by operation number. The MDS BOM is referred to as the "Planning BOM." (Reference AFMCI 21-130, *Depot Maintenance Material Control*.) The Planner will review the Material Requirement List, and compare it to the work package. The Planner will compare programmed requirements against actual usage from the previous year, and identify any variance. In the case of variance, the Planner will determine the cause, and make appropriate adjustments to the BOM.

20.33.2. **(Added)** The Planner as part of the BOW will review the aircraft/missile PDM/MOD schedule as it relates to tasks by skill in the production scheduling system, plus relevant simulation(s)/analysis results, and will note where all job-hours are networked into the schedule (Planned Labor Application). The AMR Brochure hours, simulation(s)/analysis developed in G037F or other simulation(s)/analysis tools, and aircraft/missile history is used to project annual, quarterly, and monthly aircraft/missile PDM/MOD personnel resource requirements by work package. The developed report will include the total mix and quantity of skills required accomplishing the work package by month, plus report skill shortages or overages. Skill/personnel shortfalls or overages are identified to the Production Support Flight Chief.

20.33.3. **(Added)** The Collaborative Functional Team during the ERRP will use TOs, engineering specifications, etc. to develop a list of special tools by task. The team will identify special tool shortfalls (for tools required but not in inventory). The team will determine the facility resource requirements. The team will identify facility requirements for new and existing work. The Planner as part of the BOW will link the special tool requirements to specific operations.

20.34. (Added) Develop, Simulate, and Refine the Work Package.

20.34.1. **(Added)** The Planner as part of the BOW will use the tasks identified in the Work Specification to develop individual operations. The Planner will determine the logical components of the task, and plan them as individual operations. The Planner will load developed operations into the Production Scheduling System.

20.34.2. **(Added)** The Planner as part of the BOW will review all operations from all tasks defined in the Work Spec and determine the appropriate sequencing with the assistance of first-line supervisors and mechanics. Those operations, when sequenced based upon dependency, define the critical path. Defined and sequenced operations are then grouped into major jobs in

the Production Scheduling System.
20.34.3. (Added) Operations and major jobs, which do not impact the critical path, are considered “Auxiliary/Parallel”. The Planner as part of the BOW will determine the resource requirements for tasks, and load those operations into the schedule, subordinate to resource requirements of the critical path. The result is an MDS-specific network of dependent operations built around the critical path, plus non-critical operations which are sequenced with critical path operations, into a schedule that is optimized to available resources.
20.35. (Added) Job Routing.
20.35.1. (Added) The decision to Job Route/Non Job Route will be made by the SPO/SPM or AFGLSC, as appropriate, working with the MXW and DLA. Normal practice is for an unserviceable asset to be turned into supply in exchange for an available serviceable asset. Consequently, job routed repair is not authorized if a serviceable asset is available from supply in the configuration required. All conversions from job routed to non job routed should begin budget lead-time away for anticipated cost changes to the CSAG-MD/CSAG-S. If circumstances still require job routing, such action must be reported to supply in order for supply to record accurately the true requirements for stockage.
20.35.2. (Added) Job Routed Repair. Job routed repair occurs when a recoverable component is found to be unserviceable during the overhaul, the item is removed, repaired/reconditioned, and reinstalled on the same end item. Job routing between ALCs is not authorized.
20.35.3. (Added) Non Job Routed Repair. Non job routed repair occurs when an unserviceable item is removed and replaced with a serviceable item from supply. A non-routing process is a strictly remove and replace operation.
20.35.4. (Added) Procedures for Job Routing: (As approved by the SPO/SPM or AFGLSC)
20.35.4.1. (Added) The appropriate WCDs will be developed and used as required by Chapter 19. All job-routed repairs are to be input and tracked through the repair process via the appropriate data system.
20.36. (Added) Process Routing.
20.36.1. (Added) Process routing, which consists of forwarding an item to a process shop, is an integral part of the overall repair effort but isn’t considered a job route. A process shop is defined as a DM function that provides conditioning support on component assemblies and materials, or essential support services for end items being repaired by other DM organizations. The following are examples of candidates for process routing: cleaning, plating, heat treat, welding, battery servicing, grinding, machining, NDIs, check/test, and minor maintenance (Not to Exceed Level Three Field Repairs).
20.37. (Added) MOD Requirements.

20.37.1. **(Added)** The SPO Program Manager (PM) in conjunction with the SPO/SPM Engineer and Lead Command will prepare the MOD package or SOW/TCTO. The Planner will evaluate the impact of the proposed MOD against depot capacity to include facilities, equipment, and manpower. The Planner will develop and execute simulation(s)/analysis to determine the impact of loading the MOD into the network. The Planner will identify any resource constraints caused by loading the MOD into the network. Specific constraint information must include quantity and type of resource required to accomplish the task, availability of the required resource during the execution period of that task, and impact to resource availability, based upon the resource requirements for all other tasks for all other scheduled aircraft/missile during that same period. The system should similarly reflect the impact upon resource availability of removing a particular task from the workload.

20.37.2. **(Added)** The Planner will determine the number of hours required to accomplish the MOD. In the network, these hours are measured in flowdays. Following the MOD kit proof, the Planner will refine their estimate of required hours to perform the MOD. If adjustments to the ROM and schedule are required, they are accomplished at this time.

20.37.3. **(Added)** If the MOD Kit Proof is accomplished at a SOR different from the location(s), which will actually perform the work, or if only a 'Trial Install' was accomplished, the Planner will review the PDM and MOD work scheduled on the same aircraft to identify redundant activities. The Planner will also review the Work Spec and applicable technical data for duplicate or obsolete material. The Planner will identify and validate duplicate Work Specs and operational checks. The Master Scheduler will determine where, within the annual plan, MOD(s) should be scheduled, and identifies any conflicts with scheduled work. The Planner will ensure MOD tasks that are redundant to the PDM are not incorporated into the MDS network. This is not just a concurrent block of time for the MOD, but rather a total integration of MOD operations with PDM operations where possible.

20.38. (Added) Unprogrammed Depot Level Maintenance (UDLM) Requirements.

20.38.1. **(Added)** The customer (Lead Command/FMS) generates a work request to the SPO/SPM for Unprogrammed work IAW TO 00-25-107, *Maintenance Assistance*, or by submitting an AFTO Form 103, *Aircraft/Missile Condition Data*, in accordance with TO 00-25-4, *Depot Maintenance of Aerospace Vehicles and Training Equipment*. It is the responsibility of the SPO to ensure supportability prior to forwarding the workload request to maintenance. The Planner will prepare the ROM based on tasks and LOM. The SPO will coordinate with the Master Scheduler and the owning unit to schedule aircraft/missile arrival. The SPO/SPM will complete AFMC Form 206 or AFMC Form 181, *Project Order*, using the coordinated fund site. The SPO/SPM will forward the completed AFMC Form 206 or AFMC Form 181 to Maintenance.

20.38.2. **(Added)** Following receipt of the AFMC Form 206, the Planner will activate the AFMC Form 206 in G004L. The Planner will prepare the UDLM WCD. The Planner will review the AFTO Form 103 or TO 00-25-107 and translate the tasks on the AFTO Form 103 or TO 00-25-107 into operations on a WCD. The Planner will identify hours per operations by using TOs or engineering guidance/drawings. If a LOM for the UDLM does not accompany the

AFTO Form 103 or TO 00-25-107, the Planner develops the LOM using available technical information. The Planner identifies the non-material resource requirements for each operation defined on the WCD, to include skills, equipment, special tools, facilities, etc.
20.38.3. (Added) The SPO/SPM will coordinate the developed price for the UDLM with the customer, and prepare an AFMC Form 181 to identify the funding citation. The SPO/SPM will coordinate induction timing with the customer. The SPO/SPM will forward the AFMC Form 206 and schedule to Maintenance. Upon receipt of the AFMC Form 206 and expected induction date, the Planner will input labor hours and material into G004L which will assign the JON.
20.38.4. (Added) The Planner will develop a tail/serial number specific, operational LOM by correlating items from the BOM with specific UDLM operations for a particular aircraft/missile and loading that information into the appropriate database. This LOM is not the same as that developed within G005M for planned PDM. The Planner will develop the UDLM WCD in accordance with governing directives. The Planner will assign an operation number to each UDLM operation, associate each operation with the appropriate RCC, and input the data into the appropriate system against the UDLM T-JON.
20.38.5. (Added) The Master Scheduler will integrate the UDLM schedule into the MDS network. Once the UDLM schedule is input into the planning system (e.g., G097, etc.), supportability reviews of all resources against that schedule are possible.
20.39. (Added) Unpredictable Requirements.
20.39.1. (Added) There are two types of unpredictable requirements: those that are work specification (project) related and those that are not (non-project). These can be discovered during records review (accomplished at the Pre-Induction Conference), Pre-Dock Inspections (NDI, E&I) and aircraft/missile disassembly, In-Dock activities (mechanic “stumble-ons”), or Post-Dock activities (functional test or check flight). The individual who discovers the unpredictable requirement or initiator is responsible to document it (e.g., AFMC Form 173, <i>MDS/Project Operation Assignment</i> , 959, etc.). The Planner will identify unpredictable requirements during the Pre-Induction Conference when reviewing aircraft records and AFTO Forms 103 supplied by the customer prior to aircraft/missile arrival. For the purpose of this instruction, the following definitions clarify terms used to describe unpredictable requirements.
20.39.2. (Added) Work Specification (project) Related Unpredictables. These are requirements that are defined or can be related to one of the work codes in the work specification document. These discrepancies within the scope of the Work Spec have a negotiated block of hours/money available to assign against in the course of performing programmed maintenance. Each operation will have a block of hours allocated.
20.39.3. (Added) Over and Above (O&A) Unpredictables (non-work spec/non project related). These are requirements that cannot be directly related to a work code in the current work spec, but should be complied with for safety, or because it is more economical to do the work at the depot. O&A Unpredictables will not be accomplished without prior Project Administration Officer (PAO) or as applicable, an Administrative Contracting Officer (ACO) approval. The

PAO/ACO may give advance work approval as locally supplemented. (Note: As applicable, PAO functions apply to ACO activities in support of a contracted workload.)
20.39.4. (Added) Unpredictables are either planned or unplanned based on the expected frequency of the work and the nature of the operation (complexity and criticality). The only difference between the two is that the planned has a work package pre-built and ready to drop.
20.39.5. (Added) High-Frequency Planned Operations. These are normally expected to occur for more than 20 percent but less than 100 percent of the aircraft/missile tail/serial numbers. These operations are fully planned.
20.39.6. (Added) Low-Frequency Planned Operations. These operations occur less than 20 percent but are planned when work is critical or complex.
20.39.7. (Added) Low-Frequency Unplanned Operations. Unpredictable requirements within the scope of the Work Spec which are normally expected to occur less than 20 percent of the time. Prior to being worked by Production, Planner must approve unpredictable Work Spec related requirements (not planned low percent). If necessary, the Maintenance Review Team (MRT)/missile Production Planning Team (PPT) can be assembled to assist this process. The MRT/PPT is composed of: Scheduler, 1 st Line Supervisor, Planner and PAO (Quality, PST, and Records as needed). If approved by the Planner, the work is systematically assigned an operation number and incorporated into the production schedule. Discrepancies not approved for work by the Planner are archived and presented to the customer when the aircraft/missile is delivered and Carried Forward to Home Station (CFHS). The PAO approves and funds the authorization if the work is determined to be O&A (i.e., not part of the funded work package).
20.39.8. (Added) Production, the Planner, and the PAO review Unpredictable Requirements, and determine the impact and cost on planned PDM/MOD operations. If the discrepancy is project related, or represents a “safety of flight” problem, the necessary task to correct the discrepancy is loaded into the PDM work package. Overrun of hours for project work will not drive additional funds; these tasks are trended and will be adjusted during the annual review. If the PAO approves the non-project work, the Planner and SPO/SPM will adjust the Fixed Price Sheet to reflect the additional work. If the over and above hours have been expended and more hours are required, the PAO will be notified. The Workloader approves and forwards the Fixed Price Sheet to the project order issuer for creation of an amended AFMC Form 181 to increase the PAO’s budget authority. Unprogrammed, unpredictable tasks must be tracked by the Production Support Flight to the degree that the Planner can present that data to the customer during subsequent AMRs for the purpose of including recurring unprogrammed, unpredictable tasks into future negotiated Work Specs. If the PAO determines the identified discrepancy either falls outside the scope of the PDM/UDLM/MOD and is not “safety of flight”, or otherwise determines that they will not fund the repair identified by the Engineer, maintenance will not perform the work and the discrepancy will be archived and entered on AFTO Forms 781, <i>ARMS Aircrew/Mission Flight Data Document</i> , /AFTO Forms 95, <i>Significant Historical Data</i> . In either case, a re-evaluation of the PDM time-line may be required to account for the addition of the new task. Such accounting would include the additional facilities, tools, manpower, and material inherent in the task. If the work is added to the work package, the PDM/MOD schedule and

supportability will be re-worked to account for the new task.
20.39.9. (Added) Discrepancies discovered after aircraft/missile arrival that have been planned as “low-frequency” operations will be qualified (e.g., it is funded, material can be ordered against it, etc.) by the Scheduler after Planner approval. Once qualified, the production scheduling system will issue the WCDs associated with the planned task at the start of the associated major job.
20.39.10. (Added) Low frequency project related operations must be clearly stated in the Work Spec and included as work or inspection requirements in the work package. These normally occur for less than 20 percent of the serial numbers. Formal work planning is not always completed on low frequency project related operations. Hand scribed or system generated documents can be used if no formal WCDs are available. The Planner, as part of the PPT, will perform a risk analysis of all “safety of flight” related low frequency unplanned operations based on the complexity and criticality of the work required. If the Planner determines there is significant risk involved in the operation or if the nature of the work justifies it (e.g., very complex, high cost etc.), the formal work planning process will be applied and WCDs will be prepared to support the work even if it is expected to be used on less than 20 percent of the tail numbers.
20.39.11. (Added) The mechanic/technician discovering the requirement for unpredictable work is responsible to document the discrepancy and ensure the applicable WCDs are initiated to include all follow-on maintenance actions. All discrepancy documentation will reference applicable technical data to include any follow-on actions (i.e. ops checks) required by the technical data, and part number, TO, figure and index. Prior to work being accomplished, the first level supervisor reviews the documentation to ensure the proper Production Acceptance Certification (PAC) requirements are included and the information is complete. A Maintenance Work Request (MWR) is then generated if the automated PDMSS capability exists. If the automated capability does not exist and the maintenance actions have not been previously planned, the Scheduler will submit the hand-scribed AFMC Form 173 to the Planner. The Planner will periodically review O&A occurrences and initiate full planning for those operations that occur frequently enough to justify this action. The Non-project related O&A WCDs are processed to the PAO for approval.
20.39.12. (Added) The mechanic/technician must be trained on their unpredictable work requirement documentation responsibilities. The training provided will include the responsibility for ensuring the WCDs are generated and how to prepare the work sheets/AFMC Forms 173/959 forms. The training provided will also stress that all follow-on maintenance actions required by the technical data must be documented. In addition, the training provided must include the proper use of AFTO Forms 781 and AFTO Forms 95 series.
20.39.13. (Added) Routed items must be tracked by work document and identification (aircraft tail number, serial number, metal tag, etc.) so the mechanic can readily determine if the item is the original or a substitute item. A copy of the back shop WCD/serviceable tag will accompany the item back to the aircraft/missile so the installing mechanic is aware of all maintenance performed. The WCD and/or serviceable tag will be turned into the Scheduler for entry into the

aircraft/missile records. If the routed item is a DLA managed item that is process routed for work due to non-availability of material, the Scheduler from the owning organization will ensure the appropriate information (NSN, quantity, etc.) is provided to the DLA Customer Support Specialist to ensure that Demand Data (DHAs) is processed to the DLA SOS.

20.39.14. **(Added)** The Planner reviews unpredictable discrepancies and determines whether the identified discrepancy is project/work spec related. If it is project related, the Planner verifies/corrects hours and accomplishes all other steps required to approve/qualify the task as a valid operation if hours are available within the existing funding. If the discrepancy is non-project related or project hours have been expended, the Planner will submit the discrepancy to the PAO for approval of hours/funding. Discrepancies disapproved by the Planner are forwarded to the PAO and are archived and will be presented to the customer upon aircraft/missile delivery and CFHS.

20.39.15. **(Added)** Production will request/initiate an AFMC Form 202, *Nonconforming Technical Assistance Request and Reply*, when there is no applicable technical data for the repair of the discrepancy and forward to Planning. The Planner verifies there is no applicable technical data for the repair. The Planner will review the Form 202 archives to verify if an AFTO Form 252, *TO Publication Change Request*, has been added to the appropriate technical data (Reference AFMCMAN 21-1, *Air Force Materiel Command Technical Order System Procedures*). If an AFMC Form 202/AFTO Form 252 was not accomplished, the AFMC Form 202 is forwarded to the Engineer for review and disposition.

20.39.16. **(Added)** The cognizant System Engineer reviews the discrepancy as submitted and determines an appropriate repair disposition. The Engineer will include repair steps along with any notes or cautions required for the repair. The Engineer then returns the AFMC Form 202 to the Planner. The Planner accepts the AFMC Form 202 and forwards to Production who accepts the AFMC Form 202. The AFMC Form 202 becomes an official document at this time.

20.39.17. **(Added)** If the engineering repair disposition falls under project/work spec, the Planner will plan the repair with hours and approve the work control document through the system. If the repair falls under non-project, the Planner will forward the planned hours through the appropriate system to the PAO for “over & above” funding.

20.39.18. **(Added)** If the PAO does not have the funding to accomplish the repair, the PAO will notify the Planner to submit an AFMC Form 206 for funds. A SOW for the repair will be initiated from the SPO/SPM and the Planner will initiate a rough order of magnitude (ROM). The requested 206 funds will then be coordinated through the Prime Item Manager (PIM) to establish a “T” job in G004L for the repair. The Planner will then plan and input the hours by skill and operation into the production scheduling system for tracking and accountability.

20.39.19. **(Added)** If the Engineer determines the identified discrepancy is not a defect, the Engineer will disposition the identified condition as “Serviceable As Is” (SAI). The Engineer will forward the SAI-202 back to the Planner. The Planner will file the SAI -202 for their records which are maintained for 2 years. The Planner will forward a copy of the SAI-202 to the Scheduler of the subject aircraft/missile. The Scheduler will attach the returned SAI-202 to the

discrepancy documentation (AFMC Form 173/WCD) and clear the discrepancy as “no defect.” The Scheduler will archive the SAI-202 to submit to the customer upon completion of the maintenance. (Reference AFMCMAN 21-1 for additional guidance.)

20.39.20. **(Added)** The Planner/PAO/ACO can approve a limited (non-MISTR/overhaul) repair for an item. The Scheduler will introduce the item into the backshop with a Planner approved – AFMC Form 173/WCD for a “one-time”, “limited repair” (e.g., Spot Weld). The Scheduler will route the item to the appropriate backshop for repair.

20.39.21. **(Added)** When appropriate, the Planner will develop and execute a simulation(s)/analysis of the developed workload package. The simulation(s)/analysis are run at the discretion of the Planner depending upon the anticipated impact to the Production Scheduling System of the Unpredictable Requirement. The Planner will determine whether the unpredictable requirement is a critical path or parallel operation. It is a critical path event if it has an identified dependency. Unpredictable requirements will be transformed into a work package comprised of operations and resources by type. The resources by type will be arrayed against the tail/serial-number schedule to determine the best fit for the operations in the schedule. Resource requirements will then be compared against resource availability.

20.39.22. **(Added)** Delays to schedule, along with the associated costs, will be collected and reported to P&A Section. This cost will then be reported to upper management. The Planner will also review the history of low frequency and approved unpredictable tasks to determine whether those tasks should be included in future work packages or whether the occurrence factor of low frequencies should be changed.

20.40. (Added) Control Number Selection and Assignment.

20.40.1. **(Added)** Control numbers for permanent workloads are established by G004L. For temporary workloads, the Planner will select an individual Control Number from the “block” of established numbers and add the Job Designator for a specific aircraft/missile by planning year in accordance with AFMCI 21-156, *Operational Workloading, Planning and Scheduling Control*.

20.40.2. **(Added)** The Planner will develop the Master WCD in accordance with governing instructions. The Planner will assign an operation number to each planned operation. The Control Number then ties the associated operations to a specific MDS.

20.41. (Added) Aircraft/Missile Status Documentation.

20.41.1. **(Added)** The following procedures will be used for all aircraft/missile work including unpredictable operations, low frequency predictable, and all other over and above work operations not fully planned as part of regular depot activity. Aircraft/missile status documentation is accomplished by utilizing AFTO Forms 781/AFTO Forms 95 series prior to induction into DM. After induction, depot WCDs will be used for all other DM work as the sole source of aircraft/missile status up to the preflight/testing phase. The use of AFTO Forms 781 series will be reinitiated prior to the start of the aircraft initial -6 Functional Check Flight (FCF) Preflight inspection. The depot procedures are outlined in TO 00-20-1, *Aerospace Equipment*

<p><i>Maintenance Inspection, Documentation, Policy and Procedures.</i> During PDM/MOD or other programmed/unprogrammed maintenance, all work performed shall be documented on depot WCDs IAW Chapter 19 of this instruction.</p>
<p>20.41.2. (Added) ALC aircraft personnel will debrief aircrews to determine the status of the aircraft. The aircrews will be debriefed using locally developed procedures or checklists to determine the airworthy status of the aircraft for any new incoming discrepancies prior to performance of any depot maintenance.</p>
<p>20.41.3. (Added) Discrepancies from aircraft debrief may be corrected in the AFTO Form 781A, <i>Maintenance Discrepancy and Work Document</i> and AFTO Form 781K, <i>Aerospace Vehicle Inspection, Engine Data, Calendar Inspection and Delayed Discrepancy Document</i>. Entries to include all delayed discrepancies and inspections must be carried forward to depot WCDs or transferred to AFTO Forms 781A for completion. If discrepancies are cleared using AFTO Forms 781A, technical data used to correct the discrepancies must be referenced and the maintenance technician completing the work will sign off the “Corrected By” block as prescribed by TO 00-20-1. If discrepancies are transferred to depot WCDs, the “Corrective Action” blocks of the AFTO Forms 781A and 781K must reference the depot WCDs used to clear the discrepancies. <u>All</u> uncleared entries in the AFTO Forms 781A and 781K will be transferred to depot work documents as authorized and described by TO 00-20-1. The statement, “All preceding uncleared entries transferred to depot WCDs” (specify identification number), will be annotated in the last block of the AFTO Forms 781A and 781K. Depot maintenance begins after this action or when all other pre-depot actions are complete as locally defined. The aircraft’s AFTO Form 781 series will be “closed” by records section personnel and will not be used to annotate further discrepancies. The aircraft’s records (AFTO Forms 781) will remain closed until preparation for the initial -6 FCF Preflight begins. The end result must be a complete audit trail in the AFTO Forms 781 series.</p>
<p>20.41.4. (Added) The aircraft Tail Team including a Planner and Records personnel will reconcile the AFTO Forms 781 and WCDs prior to the post dock phase. All previously transferred AFTO Forms 781A or 781K discrepancies and WCDs discrepancies that remain uncleared will be transcribed to new AFTO Forms 781. The corrective action block must reference the depot WCD used to clear the discrepancy to provide a clear maintenance audit trail. New AFTO Forms 781 will be initiated prior to the initial -6 FCF preflight to reflect the current status information, to include all open discrepancies. The AFTO Forms 781 are used from the initial -6 FCF preflight onward to document any maintenance performed.</p>
<p>20.41.5. All follow-on aircraft maintenance actions identified after initial pre-brief to crew will be documented in AFTO Forms 781. Any follow-on maintenance actions required by technical data will be identified by the responsible mechanic(s) doing the work and entered and cleared using AFTO Forms 781A series and TO 00-20-1.</p>
<p>20.41.6. (Added) Aircraft maintenance discrepancies or major depot operations discovered after post-dock activities, such as painting, not previously cleared will be annotated in the AFTO Forms 781A. All sub-operations required to accomplish major depot operations are documented on and executed using WCDs. Maintenance discrepancies or major operations annotated in AFTO Forms 781A must reference all sub-operation WCDs. The maintenance discrepancy or</p>

major depot operation will be cleared in the AFTO Forms 781A once the sub-operations WCDs are accomplished.
20.41.7. (Added) After completion of the initial FCF, all In-flight discrepancies, follow-on maintenance and remaining major PDM operations will be annotated in the AFTO Forms 781 series. WCDs will be issued to accomplish any remaining maintenance activities. When AFTO Forms 781A discrepancies are closed, a reference to the appropriate technical data will be annotated in the corrective action block. Per AFI 21-103, <i>Equipment Inventory, Status And Utilization Reporting</i> , maintenance debrief will enter flying time information into REMIS. Per Chapter 4 of this instruction, ensure flying times and installed engine event history recorder readings for all FCFs are updated no later than the next duty day after occurrence.
20.41.8. (Added) The Aircraft AFTO Forms 781 are the only source of aircraft status. WCDs direct what work is to be performed and are not a source to determine aircraft status. These procedures are to prevent dual documentation of maintenance status in both the AFTO Forms 781 series and depot WCDs.
20.42. (Added) Post Dock Documentation.
20.42.1. (Added) Upon completion of the aircraft In-Dock Maintenance Phase of depot level maintenance, the Post Dock Review Team (PDRT) will conduct a Post Dock Records Review (PDRR) using the Post Dock Review Checklist (PDRC), AFMC Form 502.
20.42.1.1. (Added) The PDRT will reconcile all forms and documents using the PDRC AFMC Form 502, ensuring all required signatures are obtained.
20.42.1.2. (Added) PDRT Required Attendees are the Losing Scheduler/Scheduling Element (Chair), the Gaining Scheduler/Scheduling Element, the Planner/Planning Element, the Forms/Records personnel, and the Gaining Post Dock Supervisor or designated alternate.
20.42.1.3. (Added) PDRT Optional Attendees, based on MDS requirements are the Losing Production Phase Supervisor or designated alternate, the Fuel Foreman, the Gaining PST, and others as determined by local ALC policy.
20.42.1.4. (Added) All previously transferred AFTO Forms 781A or 781K discrepancies and WCDs discrepancies that remain uncleared will be transcribed to new AFTO Forms 781. The corrective action block must reference the depot WCD used to clear the discrepancy to provide a clear maintenance audit trail. New AFTO Forms 781 will be initiated prior to the initial -6 FCF preflight to reflect the current status information, to include all open discrepancies. The AFTO Forms 781 are used from the initial -6 FCF preflight onward to document any maintenance performed.
20.43. (Added) Supportability Reviews.
20.43.1. (Added) The SPO/SPM (Program Office) is responsible for performing supportability reviews outlined in the Engineering Requirements Review Process (ERRP) and Requirements

Supportability Process outlined in the Logistics Requirements Determination Process (LRDP) Handbook and Guide located on the Centralized Asset Management CoP: https://akm.wpafb.af.mil/community/views/home.aspx??Filter=23211 . These reviews are designed to determine supportability of maintenance requirements.
20.43.1.1. (Added) The ERRP drives the generation of a new engineering requirement from conception through approval by providing justification with fully developed supportability elements. In addition, it directs a review of existing scheduled maintenance tasks for validity. An initial supportability review is performed during this process.
20.43.1.2. (Added) The Requirements Supportability Process identifies the supportability elements, roles/responsibilities and process steps to ensure the scheduled maintenance tasks in the Aircraft Missile Requirements (AMR) Work Spec, AMR Brochure, and Bill of Work (BOW) are supportable.
20.43.2. (Added) Supportability assessment/reviews: There are three levels of supportability assessments/reviews to be conducted as part of the overarching requirements process.
20.43.2.1. (Added) Strategic Supportability: Occurs through FYDP until the brochure is published. A strategic supportability assessment reviews all scheduled maintenance tasks (Strategic BOW) for a MDS (i.e. is not tail or serial number specific).
20.43.2.2. (Added) Operational Supportability: Occurs from when the brochure is published to aircraft/missile induction. Based on the operational tail/serial number (as applicable) specific BOW – assumes all identified supportability elements are or will be available 31 days prior to task execution schedule. The task review scheduled maintenance task(s) will be accomplished 90 days prior to execution of the task(s).
20.43.2.3. (Added) Tactical Supportability: Occurs from aircraft/missile induction to aircraft/missile produced date. The task review is based on availability of supportability elements to meet task execution schedule. Responsibility for supportability is outlined in Chapter 15 of the LRDP Handbook. Maintenance will identify unpredictable requirements discovered from induction to completion for the SPO/SPM to determine supportability.
20.43.2.4. (Added) Supportability Elements for all reviews: The elements to be reviewed for supportability are: Parts; Air Force Global Logistics Center (AFGLSC) managed, Defense Logistics Agency (DLA) managed (that also include General Support Division (GSD), Local Purchased, and Local Manufactured); Support Equipment; Special Tooling; Common Tooling; Personal Protective Equipment (PPE); HAZMAT; Manpower/skills; Production Support Center (PSC) or “Blue Straw” or “Tool Crib” material; and Facilities/utilities.
20.43.3. (Added) Tactical Supportability (Tail Team/Missile PFT Rolling Ten Day “Forward Look”).
20.43.3.1. (Added) This review occurs in rolling two week windows (i.e. ten workdays).

Accountable Tail Teams/PFTs consisting of a Scheduler, Planner, PST, and Aircraft/Missile Supervisor, will be assigned to individual aircraft/missile tail/serial numbers. The number of aircraft/missile each Tail Team/PFT is responsible for and the skill level of Tail Team/PFT members are based upon schedule requirements. The Tail Team/PFT will have complete responsibility for task execution on their assigned aircraft/missile. The Scheduler will control execution of the tail/serial number-specific production schedule, and will release only supportable WCDs to the Aircraft/Missile Supervisor. The Aircraft/Missile Supervisor will adhere to the tail/serial number-specific production schedule as closely as skill availability allows. The PST will ensure parts are ordered and coordinate with DLA the delivery of material to the aircraft/missile. Tail Team/PFT members will review the status of the weekly production plan for each aircraft/missile assigned to the Tail Team/PFT daily. The Scheduler/PST will coordinate delivery of Special Equipment, and the availability of Special Tools, for each aircraft/missile IAW scheduled operation start.

20.43.3.2. **(Added)** The Planner will identify items, which can be logically associated by operation and packaged together/kitted for delivery. To what degree material is planned into operational packages will be locally determined.

20.43.3.4. **(Added)** If a review by the Scheduler, PST, or mechanic reveals some local Operation Package items that were not loaded/identified in the material planning system (e.g., D230, G005M), the Scheduler/PST will contact the Planner, who will add that item to the local operation/material list.

20.43.3.5. **(Added)** The DLA Sustainment Specialist/Customer Support Specialist will similarly review items for which the EDD has slipped, and determine if the new EDD threatens the schedule, or otherwise warrants additional action.

20.43.3.6. **(Added)** The PST will confirm availability of MOD kits or PDM/UDLM operation packages to meet the RDD for individual aircraft/missile, according to the PDM/UDLM/MOD schedule. Planners will locally determine the appropriate replacement factor and occurrence rate for material to include in kits and operation packages.

20.43.3.7. **(Added)** The PST may separate existing mod kits by Operation Number. The members of the Tail Team/PFT will review the status of the aircraft/missile, to include schedule progress, material supportability projections (ten-day to two-week forward look), available manpower, etc., and coordinate available resources toward accomplishment of the production schedule. The Scheduler will appraise schedule status, and determine which operations are next in the schedule and provide the operations to the PST. The PST will brief material supportability of operations scheduled for the period of the forward-look. The PST will provide the Scheduler and Aircraft/Missile Supervisor with a list of operations that are supportable. The Aircraft/Missile Supervisor will review the scheduled operations falling within the “window” of the forward look, and determine if manpower/skills are available.

20.43.3.8. **(Added)** Based upon the review of schedule, material supportability, and manpower/skills availability, the Tail Team/PFT will make required adjustments to the schedule. Appropriate delay codes will be entered against unsupportable operations. A report of non-

supportable and delay-coded operations will be available in the scheduling system. The Aircraft/Missile Supervisor will perform a forward look of hours by skill required to perform supportable scheduled operations. The Aircraft/Missile Supervisor will report overages and shortfalls by skills to the Production Flight Chief, who will reallocate available skills to support the total master system schedule (i.e., allocate manpower to and from other aircraft/missile).

20.43.3.9. **(Added)** The Aircraft/Missile Supervisor and mechanics will meet as required at beginning of shift to ensure effective crew communication (turnover log, supportable WCDs, kit status and locations, etc.) occurs between shifts. Daily crew meetings will occur at shift overlap (if applicable). The purpose is to receive and pass the status of work to the next shift, and provide information regarding supportable WCDs and work packages to the next shift. Second and third shifts will also pass on information regarding work accomplished for day shift support resolution, if appropriate. The Aircraft/Missile Supervisor will ensure critical path operations are continued across all shifts and will deliver reports to relieving supervisors regarding critical path accomplishment.

20.43.3.10. **(Added)** The Squadron Commander/Director will chair a weekly meeting with the appropriate support section managers. As a minimum, critical path planned vs. critical path completed, flow days planned vs. flow days completed, and negotiated output date vs. Production Scheduling System projected output date will be reviewed for each aircraft/missile. The Squadron Commander/Director will assign action items to the appropriate support section manager(s) for problems that are beyond the scope of the Tail Team/PFT to resolve. Action Items will be answered by the next working day. The Production Support Flight will work logistics issues. The Production Chiefs will resolve skill issues to ensure integrity of the Master (all aircraft/missile) Schedule. If a change in the operations scheduled within a ten-day window is required, the Scheduler and/or Aircraft/Missile Supervisor will adjust the operation execution date, as appropriate, within the confines of resource availability to optimize schedule execution, such that the negotiated aircraft/missile delivery date is unaffected. The Scheduler will coordinate with the Master Scheduler to resolve changes that fall outside the ten-day window.

20.43.3.11. **(Added)** The Scheduler will coordinate for the delivery of special or AGE equipment. Production will notify the Tool Crib to expect demand for specific special tools required to execute the schedule by operation. The PST will coordinate with the Material Handler/Expediter to deliver equipment required to execute the schedule by operation.

20.43.3.12. **(Added)** The Master Scheduler will review all overtime requests. If overtime is required to protect the schedule, the Master Scheduler will determine the optimal apportionment of that overtime by aircraft/missile.

20.43.4. **(Added)** UDLM Supportability Review.

20.43.4.1. **(Added)** Prior to induction, the Planner will perform a complete supportability analysis on UDLM required work package for all resources (technical data, material, equipment, special tools, skills, facilities, etc.) required to support the UDLM. The Planner will evaluate the output of the resource determination and simulation(s)/analysis, compare them with all resource requirements for all other work scheduled during the same period, and identify any shortfalls to

the SPO/SPM. The Master Scheduler will coordinate with the SPO/SPM and schedule the UDLM work within the fiscal year Production Schedule. The Planner will enter the JON into G004L and coordinate creation of a specific Tail/Serial Number Schedule.

20.44. (Added) Establish and Open Serialized JON.

20.44.1. **(Added)** The Planner will identify a specific tail/serial number and JON against a Control Number, and forward it to a Workloader. The Workloader will activate the obligation of funds against the specific tail number in G004L. When inputting the three digit JON suffix to the existing five-digit Control Number with a single-field Job Designator, the resultant nine-digit number will account for costs and resource control by tail/serial number.

20.44.2. **(Added)** The Planner will “serialize” the JON (i.e. links a specific aircraft/missile serial number to a three-digit JON suffix). The Planner will then forward this information to the Workloader. The Workloader then will input the serial number/JON suffix data into G004L. At this point, CSAG-MD funds become available in the Maintenance Data Systems for use.

20.44.3. **(Added)** The SPO/SPM will provide the task listing to the Planner. Tasks are categorized as either “fixed-price” or “options”. The Planner will validate which tasks on the list will be worked. The validated list is used to make final adjustments to the tail/serial-number specific work package by loading the appropriate options into the production scheduling system.

20.44.4. **(Added)** The Planner will select operations by Work Categories and Configuration Codes, and input them into the production scheduling system, which connects to G004L (for production count). The result is a tail-number/serial-number specific schedule by operation.

20.44.5. **(Added)** The Scheduler or Planner will open applicable control numbers connected to the JON in the cost accounting system (G004L). Opening of the JON (control numbers) for materials ordering may occur 30 or more days prior to aircraft/missile arrival within the same fiscal year.

20.45. (Added) Request and Order Material.

20.45.1. (Added) Direct Exchangeable Items.

20.45.1.1. **(Added)** The PST turns in the repairable item through ABOM/NIMMS and orders a serviceable item. The cost of a new unit is charged against the aircraft/missile JON. The DLA Customer Support Specialist will monitor status of all direct exchangeable items on order to determine capability to satisfy depot demands. If the requisition status does not meet the RDD and cannot be expedited, supportability options may include:

20.45.1.1.1. **(Added)** Raise priority to MICAP when the condition is within 31 days of a particular system operational check (critical path). (See AFMAN 23-110.)

20.45.1.1.2. **(Added)** Initiate a "T" JON (AFMC Form 206) for local repair or manufacture of the item.

20.45.1.1.3. (Added) Authorization to cannibalize the item. (See AFMCI 21-130.)
20.45.1.1.4. (Added) Send unserviceable unit to respective “backshops” for repair with the repaired item going to the Tail Number Bin (TNB)/Missile Serial Number Bin (SNB) when complete if the item is not needed immediately at the aircraft/missile.
20.45.1.1.5. (Added) Notify the customer that the negotiated delivery date will slip day-by-day, and that additional costs in overtime may be incurred to get the aircraft/missile back on schedule.
20.45.2. (Added) Planned Material.
20.45.2.1. (Added) The PST will review a LOM for each operation within the current two-week "window" for each tail/serial number.
20.45.2.2. (Added) Request(s) for material, not pre-positioned at the aircraft/missile, will be submitted into the Material Processing System (MPS-D230) or other designated material processing system to support the current two-week schedule "window". The location and timing of pre-positioning of material will be determined locally, as appropriate. The Scheduler/PST will determine what material to order, when to order it and where it should be delivered (e.g., to the aircraft/missile or TNB/SNB).
20.45.2.3. (Added) While working on the aircraft/missile, the mechanic can identify an item(s) required to accomplish the planned operation. The mechanic reviews and determines the items required to accomplish the specific operation. The mechanic will also identify material required to accomplish “install” operations immediately following execution of any associated "remove" operation.
20.45.2.4. (Added) The mechanic will pull bench stock material required to complete an operation unless the IPV contractor performs kitting of these items. The IPV contractor will replenish bench stock items in accordance with the quantities identified during routine inventories.
20.45.3. (Added) Unplanned Material Request.
20.45.3.1. (Added) The mechanic/PST will request material via the material ordering system with the priority necessary to meet the RDD shown in the operational schedule. Material requests for "Unpredictable" (not planned against the operation, or quantity exceeding that planned against the operation) will be sent to the Planner for review and approval for NON-BOM material if appropriate. (See AFMCI 21-130.)
20.45.3.2. (Added) The Planner receives and reviews NON-BOM material requests for unprogrammed material in the Material Module of the appropriate production scheduling system. The Planner will determine if the requested material should be planned against an operation, if the material was previously ordered, or if it was erroneously ordered for a different operation.

The Planner reviews the quantity ordered against the tail/serial-number-specific LOM quantity and Units Per Assembly (UPA). Note: For G097 users only, if the Planner determines that the material should be ordered, the Planner will change the status code in the Material Module to "Approved". Planner approval triggers the MPS (D230) to overlay the material data included in the request into ABOM/NIMMS to order the material.
20.45.4. (Added) Resolve Stock Ineffectiveness Via Supportability Options.
20.45.4.1. (Added) The PST will track the status of all outstanding backorders on a daily basis and notify the DLA Customer Support Specialist if status is not adequate.
20.45.4.2. (Added) DLA Customer Support Specialist will notify the "Sync Team" to update the "Hot Item" list. Hot Item is a term for a required item in which the EDD exceeds the RDD that is being processed or repaired. The Scheduler will provide the item RDD to the Sync Team. The Sync Team will update the Hot Item list with the new RDDs. With manufactured/routed items the Hot Item list will also be updated to reflect the process of repairing the item, as opposed to the original intent of replacing the item (manufacture pieces of a part as opposed to manufacture of the end-item with an NSN or locally assigned P number).
20.45.5. (Added) Work-Arounds.
20.45.5.1. (Added) The Scheduler and Aircraft /Missile Supervisor will develop work-arounds when required to compensate for delays in material supportability (EDD exceeds RDD). Examples of work-around include re-arranging major jobs, crew size adjustments, multiple shifts, overtime, etc. Based upon the flow days impact of the developed work-around, the Scheduler and Aircraft/Missile Supervisor will determine whether to delay execution of a scheduled operation. The following rules apply for developing work-arounds:
20.45.5.1.1. (Added) Identify and work major jobs that do not affect the major job of the "Hot Item", i.e., work jobs that are parallel to the major job of the Hot Item, but are not on the schedule critical path.
20.45.5.1.2. (Added) Man-load the installation major job (apply more people in the current shift) of the hot item to get the major job back on schedule.
20.45.5.1.3. (Added) Apply multiple shifts to the "install" major job of the hot item.
20.45.5.1.4. (Added) Apply overtime to the install major job of the hot item.
20.45.5.1.5. (Added) Cannibalization (CANN) Actions
20.45.5.2. (Added) If all efforts to acquire the required material by the RDD fail, the Scheduler will review what (if any) CANN options exist and will initiate CANN procedures in accordance with AFMCI 21-130. The Scheduler will forward the number of CANNs, and the number of labor hours consumed to perform CANNs, to the P&A Section for analysis and reporting to the SPO/SPM and the Squadron Commander/Director. All supply documentation will be processed

to ensure the correct JON is charged.
20.45.5.3. (Added) When the CANN is approved, the Scheduler prepares the required CANN paperwork and the mechanic will remove the required item from the “donor” aircraft/missile. The PSS will deliver the item to the receiving aircraft/missile.
20.45.5.4. (Added) CANN actions are a last resort option to obtain a part or component. Since maintenance is not reimbursed for labor and other costs to perform CANNs, this procedure should be avoided if other avenues to secure the item are available. The Scheduler will initiate documentation for CANN actions. Note: This does not include CANN actions directed by the SPO via an AFMC Form 206 in support of the Field.
20.45.5.5. (Added) Engineering Disposition and Schedule Change.
20.45.5.5.1. (Added) If all attempts to resolve a material shortfall fail, the Tail Team/PFT will request an Engineering disposition (AFMC IMT 202). The Tail Team/PFT will request Engineering to determine whether the discrepancy represents a “safety of flight” condition. If not, the aircraft/missile can be returned to the customer without repairing the identified discrepancy. The discrepancy will be archived, and the schedule will not be changed.
20.45.5.5.1.1. (Added) If the discrepancy does represent a “safety of flight” condition, the Scheduler will initiate a schedule change through the Master Scheduler to the SPO/SPM via appropriate channels. The schedule change represents a slippage of the negotiated delivery date. The Scheduler and Tail Team/PFT can effect schedule changes peculiar to a specific aircraft/missile, which do not impact other aircraft/missile schedules.
20.45.5.5.1.2. (Added) The Master Scheduler will evaluate the impact of the recommended change upon the total system schedule. If the Master Scheduler determines that system priorities and resource constraints require a change to the aircraft/missile schedule, they will direct the Planner to effect the appropriate change to the tail/serial number network.
20.46. (Added) Receive, Store, and Deliver Material.
20.46.1. (Added) DLA will receive and inspect incoming material for obvious damage, check for correct documentation, and deliver to point of use (POU).
20.46.2. (Added) Material received from maintenance that was removed to FOM will be maintained electronically or manually. The aircraft/missile mechanic is responsible for attaching proper documentation to the item removed to FOM and will notify the PSS. The PSS will move the item into the FOM storage area. The first line supervisor is responsible for ensuring that items removed by the mechanics are identified and presented to the PSS for input in a timely manner. (See AFMCI 21-130.)
20.46.3. (Added) The Planner will review the system-generated data on unplanned manufactured items. The Planner notes the occurrence factor (i.e., number of issues) for each

item. If the Planner notes a "significant" quantity of issues for the item, the Planner may elect to plan that item against the operation.
20.46.4. (Added) The Planner will advise the Equipment Specialist to update the Acquisition Advice Code for items if recorded usage history so warrants.
20.46.5. (Added) The PST will turn in discrepant material received by maintenance to the DLA Shop Service Center (SSC) for credit. DLA will initiate a Report of Discrepancy (ROD) for any discrepant material received.
20.46.6. (Added) Item Delivery In Accordance With Schedule and Requirements
20.46.6.1. (Added) The DLA material handler will deliver items directly to the PSS. Any material stored within the FOM/TNB/SNB will be delivered by the PSS to the aircraft when required. Oversized items delivered directly from the "backshop" will be moved to the aircraft/missile by the AF material expeditor.
20.46.6.2. (Added) Items that cannot be delivered by the PSS (e.g., HAZMAT or tools) will be picked-up by the mechanic.
20.46.6.3. (Added) The PST is the primary agent for receipt of material at the aircraft/missile. Other personnel at the aircraft/missile (e.g., Scheduler, Aircraft/Missile Supervisor, and mechanic) may also receipt material.
20.46.6.4. (Added) Mechanics will initiate a Quality Deficiency Report (QDR) any time they identify a delivered item to be discrepant that does not meet form, fit, or function, and notify the PST that a replacement will be required. QDR procedures are identified in T.O. 00-35D-54.
20.47. (Added) Measure Results and Analyze Trends.
20.47.1. (Added) The P&A will monitor and review internal Production Support Flight process performance and feedback to determine the correct metrics for providing accurate feedback for focused and effective process improvement. Selected measures must accurately reflect the status of critical indicators of success. Subsequent to determining the correct metrics for providing accurate feedback, the P&A will identify the source(s) for the information used to collect that metrics. The P&A will then determine the parameters for acceptable Production Support Flight performance within the selected metrics in accordance with Squadron Commander/Director guidance. The P&A office will also monitor metrics driven by the Maintenance Group or Wing.
20.48. (Added) Evaluate Process and Procedures.
20.48.1. (Added) The P&A Unit will perform periodic review of procedures to verify they support mission objectives. The results of these reviews will be reported to the Production Support Flight Chief. As a result of internal review, the P&A Section will conduct trend analyses, identify changes to policies and procedures, system changes, remedial training requirements, measure performance deficiencies, as required.

<i>Section 20D-Production Support for the Software Maintenance Group (SMXG)</i>
20.49. (Added) Purpose. This section outlines the DM production support philosophy and policies required to effectively operate and manage the Software Maintenance Group (SMXG).
20.49.1 (Added) Standard pre-planning and production support policies and structure for the SMXG are defined in <i>Section 20A-Overview</i> and documented in the ALC local supplement to this instruction.
<i>Section 20E-Production Support for the Maintenance Support Group (MXSG)</i>
20.50. (Added) Purpose. This section outlines the DM production support philosophy and policies required to effectively operate and manage the Maintenance Support Group (MXSG).
20.50.1. (Added) Standard pre-planning and production support policies and structure for the MXSG are defined in <i>Section 20A-Overview</i> and documented in AFMCI 21-127, <i>Depot Maintenance Plant Management</i> .
Chapter 21 (Added) - DEPOT MAINTENANCE FOR MAINTENANCE OPERATIONS CENTER AND ENGINE MANAGEMENT
21.1. (Added) General. The Maintenance Operations Center (MOC) and Engine Management (EM) sections are responsible for monitoring and developing strategies to sustain the health of the engine and aircraft fleet. The MOC monitors and coordinates sortie production, maintenance production, and execution of the flying and maintenance schedules while maintaining visibility of fleet health indicators. Engine Management monitors engine removals and replacements, component tracking, engine Time Compliance Technical Orders (TCTO) and Time Change Items (TCI), engine records in the Maintenance Information System (MIS), Comprehensive Engine Management System (CEMS), and Reliability and Maintainability Information System (REMIS). They also perform engine manager duties.
21.1.1. (Added) In addition to the responsibilities listed in Chapter 3 of this instruction, the Maintenance Group Commander (MXG/CC) or equivalent will appoint an engine Stock Record Account Number (SRAN) Manager or a unit engine manager and alternate where applicable to comply with Air Force Instruction (AFI) 21-104, <i>Selective Management of Selected Gas Turbine Engines</i> and Technical Order (T.O.) 00-25-254-1, <i>Comprehensive Engine Managament System Engine Configuration, Status and TCTO Reporting Procedures</i> .
21.1.2. (Added) In accordance with AFI 21-103, <i>Equipment Inventory, Status and Utilizaion Reporting</i> , Maintenance Debrief will enter all flying hours information into REMIS. Ensure flying hours and installed engine event history recorder readings, for all Functional Check Flights (FCFs) are updated no later than the next duty day after occurrence per Chapter 4 of this instruction.

21.1.3. (Added) In accordance with AFI 21-103 (Chapter 2) AFI 16-402, <i>Aerospace Vehicle Programmin, Assignment, Distribution, Accounting, and Termination</i> , and Lead Command supplements, the Aerospace Vehicle Distribution Officer (AVDO) will ensure aircraft status is properly reported and maintained and accurately reports all assignment/possession changes through the Lead Command AVDO.
21.1.3.1. (Added) Ensure AVDOs also report all assignment/possession changes to the AFMC/A3 Aircraft Fleet Manager.
21.2. (Added) Maintenance Operations Center (MOC). The MOC monitors and coordinates, maintenance production, and execution of the flying and maintenance schedules while maintaining visibility of aircraft status. Through coordination with maintenance units, the MOC communicates priorities for competing limited resources [e.g., fuel or calibration docks, wash racks, and dispatched specialists from the maintenance squadron(s) (e.g., egress)] based on maintenance priorities. The exchange of information between squadrons and the MOC must be in sufficient detail to allow the MOC to comply with reporting requirements and to identify potential problems.
21.2.1 (Added) Maintain visual aids (electronic or manual) to show the status, Expected Time In Commission (ETIC) and location of each aircraft on station which includes tracking aircraft maintained or supported by the unit but not on station. Ensure status boards depicting aircraft status and location comply with program security guidelines.
21.2.2. (Added) Publish local radio call signs for maintenance Land Mobile Radio (LMR) networks.
21.2.3. (Added) Ensure aircraft status and ETICs are properly reported by the Post Dock/Section Chief IAW AFI 21-103, and AFMC supplements.
21.2.4. (Added) Monitor the progress of aircraft FCFs.
21.2.5. (Added) Inform affected activities of changes in priorities, plans, and schedules.
21.2.6. (Added-AFMC) Coordinate on changes to the flying schedule with applicable agencies.
21.2.7. (Added) Request support services (e.g., standby fire fighting capability, aircraft water, snow removal, fueling and defueling service, civil engineer support, or control tower clearances for ground movement of aircraft and equipment).
21.2.8. (Added) Coordinate on all aircraft engine runs and all aircraft ground movements conducted by maintenance personnel prior to execution.
21.2.9. (Added) Develop, implement, and maintain functional checklists.
21.2.9.1. (Added) Functional checklists are required for use during actions such as, aircraft crash, flightline fire, severe weather warning or evacuation, runway closure, Quick Reaction

Checklists (QRC), and any other unusual circumstances deemed necessary. Use unit operational plans as a guide in developing these checklists. Checklists contain those actions required to be taken by functional area(s). The MOC maintains checklists In Accordance With (IAW) AFMC local guidance.
21.2.10. (Added-AFMC) Coordinate munitions deliveries between flying operations and munitions maintenance activities/control, when applicable. Wings will publish notification requirements/procedures when required. (i.e. impulse carts).
21.2.11. (Added-AFMC) Ensure all deviations to the flying schedule are reviewed and accurately reported.
21.2.12. (Added-AFMC) Notify flightline supervision and/or Post Dock supervision of OAP code —CI and —EI conditions and ensure aircraft are not operated until results of Oil Analysis Program (OAP) sample(s) are known, as applicable by airframe.
21.2.13. (Added) Notify appropriate agencies (e.g., Pro Super, flightline expeditors, fuel cell maintenance, munitions control, hush house/test cell, etc.) of severe weather warnings.
21.2.14. (Added) Notify the wing safety office, Quality Assurance (QA), and wing Foreign Object Damage (FOD) monitor of mishaps involving aircraft FOD, aircraft damage, or injuries resulting from aircraft maintenance.
21.2.15. (Added-AFMC) MOC Personnel. Personnel must be qualified on at least one of the assigned weapons systems, or have completed all local Qualification Training tasks for assigned job series. Waiver authority for this requirement rests with the Aircraft Maintenance Group Commander (AMXG/CC)/Director.
21.2.15.1. (Added-AFMC) The MOC senior coordinator or representative will attend the production/scheduling meeting.
21.2.15.2. (Added) The MOC senior coordinator will establish a proficiency training program for weapons system coordinators to familiarize personnel with every aspect of MOC operation.
21.2.15.3. (Added) Personnel assigned to the MOC will be capable of reporting aircraft status from the Minimum Essential Subsystems List (MESL) and operating MIS remote devices before assuming unsupervised duties.
21.2.16. (Added) The MOC should be located near the flightline. The facilities and visual aids must meet the following minimum standards:
21.2.16.1. (Added) A completely enclosed room with air conditioning and heating. An observation room is permitted. The doors to the MOC and the observation room will be either mechanically or electrically locked to control access.

21.2.16.2. (Added-AFMC) Isolate MOC electrical power circuits. Provide a standby power source and emergency lighting. Establish procedures to operate standby power sources or suitable relocation site.
21.2.16.3. (Added) Use visual aids to provide ready access to critical data. Computer terminals may be used in place of visual aids. If this option is used, develop procedures to retrieve printed products on a regular basis in case of system failure. Visual aids will display the following:
21.2.16.3.1. (Added-AFMC) Aircraft Status. Display aircraft status in the following columns: serial number, location, status, limitations/remarks, ETIC. Also display columns for configuration, OAP status codes, and fuel load as applicable by airframe and availability of MOC software. Units having only one standard configuration or fuel load may omit these columns. Units using automated systems need to display the above information, but may use —remark or —narrative portions of the screen for items not listed by specific title.
21.2.16.3.2. (Added) Flying Schedule. Display the individual aircraft scheduled for flight each day with the following information columns, as a minimum: aircraft serial number, scheduled takeoff, actual takeoff, scheduled landing, actual landing, sortie configuration, call sign and remarks.
21.2.17. (Added) MOC Maintenance Communications. Reliable, redundant and effective communications systems are essential for efficient operation. Develop and exercise comm-out procedures, to include loss of radios, Local Area Network (LAN) and phone. Personnel shall receive initial radio operating training before assuming duties involving radio operation IAW AFI 33-106, Managing High Frequency Radios, Land Mobile Radios, Cellular Telephones, and the Military Affiliate Radio System; AFMAN 33-120, Radio Frequency (RF) Spectrum Management; AFI 33-118, Radio Frequency Spectrum Management; and AFI 33-202, Network and Computer Security.
21.2.17.1. (Added) Process requests for specific radio equipment to support maintenance activities IAW Air Force Manual (AFMAN) 23-110, USAF Supply Manual. Specific radio allowances are stated in AS 660.
21.2.17.2. (Added) A Very High Frequency (VHF)/Ultrahigh Frequency (UHF)/High Frequency (HF) radio is authorized to provide communications between aircraft and maintenance.
21.2.17.3. (Added-AFMC) Each MOC will have a hotline on the secondary crash phone net. When required, direct communications lines will be provided to QA, Explosive Ordnance Disposal (EOD), airfield operations, base fire department, Non-Destructive Inspection (NDI), control tower and the central security control, as applicable.
21.3. (Added) Engine Management (EM) Section. EM will: Monitor engine removals and replacements, component tracking, engine TCTOs and TCIs, engine records in the MIS and CEMS and perform engine manager duties. Manage unit efforts to maintain adequate engine support for mission requirements.

21.3.1. (Added) Manage the MIS and CEMS IAW AFI 21-104, AFI 10-201, Status of Resources and Training System, AFI 23-101, Centrally Managed Equipment, TO 00-25-254-1, System Manual – Comprehensive Engine Management System (CEMS) (D042) Engine Status, Configuration, and TCTO Reporting Procedures, TO 00-25-254-2, System Manual – Comprehensive Engine Management System for DSD: D042, TO 00-20-5-1, Instructions for Jet Engine Parts Tracking and Fatigue Limit Control, Air Force Computer Security Manual (AFCSM) 21-558, Comprehensive Engine Management System, and applicable aircraft Dash-6 TOs.
21.3.2. (Added) A local Operating Instruction (OI) will be written at each Air Logistics Center (ALC) to designate engine management responsibilities IAW AFI 33-360, <i>Publications and Forms Management</i> . Minimum requirements include:
21.3.2.1. (Added) Due to the unique complexity of the ALCs, the location of the SRAN Engine Manager will be identified in their local guidance.
21.3.2.2. (Added) Ensure engine, module, and component data is reported to EM no later than close of business the first duty day after the event (e.g., part removal, installation, time update, and TCTO status change).
21.3.2.3. (Added) Coordinate local policy with the Air Force Material Command /Depot Operations Division (A4D) in coordination with CEM prior to publication.
21.3.3. (Added) Plan, schedule, and document maintenance actions on possessed engines.
21.3.4. (Added) Manage time changes and provides TCI information (cycles remaining, engine operating time (EOT), etc.) on serially controlled items to propulsion maintenance for engine and engine component cannibalization (CANN) actions. Manage time changes on all engines and “life-limited and serially tracked” components.
21.3.5. (Added) Ensure all engine Special Inspections (SI) are loaded in MIS against the engine, not the aircraft.
21.3.6. (Added) Ensure all engine/module inspections/TCIs tracked by EOT, calculated cycles (CCY), total accumulated cycles (TAC), etc., are loaded/tracked in the MIS and CEMS.
21.3.7. (Added) Manage TCTOs on all possessed engines and components both installed and removed. Comply with TCTO duties and responsibilities for engine items. Maintain records on TCTO kits and status for all engines installed on aircraft sent to depot.
21.3.8. (Added) Maintain and update historical documents for all assigned engines, modules, and major assemblies using the MIS IAW TO 00-20-1, Aerospace Equipment Maintenance General Policy and Procedures.

21.3.9. (Added) Verify engine total time in CEMS against MIS. Reconcile aircraft engine record times in CEMS database.
21.3.10. (Added) Establish a CEMS and MIS contingency plan for when either or both systems are down for extended periods (more than 48 hours). The plan will include procedures for retaining data in date-time order for input when MIS/CEMS operation resumes.
21.3.11. (Added) The SRAN engine manager is selected from Air Force Specialty Code (AFSC) 2R1X1 or 2A6X1 with at least a 7 or 9 skill level or civilian equivalent. The assistant will be at least a 5-skill level from the same AFSCs or civilian equivalent. The SRAN engine manager will:
21.3.11.1. (Added) Advise the MXG/CC on administration of the base SRAN Engine Manager Program, engine maintenance concepts, principles, policies, procedures and techniques within the maintenance group. Act as the single point of contact between the ALC and Command Engine Manager (CEM) for SRAN EM questions.
21.3.11.2. (Added) Establish written procedures to support EM responsibilities IAW AFI 21-104 and this instruction. Provide inputs for AFMC supplements (if developed) to TOs 00-25-254-1 and 00-25-254-2. Procedures must:
21.3.11.2.1. (Added) Specify responsibilities of affected work centers for accurate and timely MIS/CEMS reporting of TCTO, Special Inspection (SI), TCI, and other documentation requirements (e.g., borescope inspections, blade blending, and CANN actions).
21.3.12. (Added) Ensure aircraft, engine records, MIS and CEMS database reconciliation occurs after maintenance actions are complete and prior to aircraft, engine and/or life-limited serially tracked component leaving the overhaul repair facility
21.3.13. (Added) Perform periodic self-inspections to monitor accuracy and timeliness of reporting.
21.3.14. (Added) A training plan will be developed to ensure engine management section personnel who report engine status or are responsible for engine documentation and scheduling comply with management responsibilities IAW AFCSM 21-558, Vol. 2; TO 00-25-254-1/2 and TO 00-20-1, <i>Aerospace Equipment Maintenance General Policy and Procedures</i> .
21.3.15. (Added) Maintain a jacket file of engine shipping documents IAW AFI 33-322, <i>Records Management Program</i> .
21.3.16. (Added) Perform duties and requirements for engine shipments, protection, and storage IAW AFPD 24-2, <i>Preparation and Movement of AF Materiel</i> , AFI 21-104, and TOs 00-85-20, <i>Engine Shipping Instructions</i> , 2J-1-18, <i>Preparation for Shipment and Storage of Gas Turbine Engines</i> , and 2-1-18, <i>Aircraft Engine Operating Limits and Factors</i> .

Table A14.2. (Added) PAC Task Related Recurring Training Requirements (RTR)

PAC TASK RELATED RECURRING TRAINING REQUIREMENTS (RTR) (FOR ALCS ONLY)
A14.2.1. (Added) Task Related RTRs. These recurring training requirements are required to perform specific tasks. Task related RTRs shall be linked to specific tasks as assigned and shall cause automatic decertification if not completed on time. Employees may have task related training without being assigned the specific tasks. PAC task certification shall not be granted until the applicable task related training requirements are completed. This list is not all inclusive. Wings shall establish additional task related RTRs specific to the work requirements, as required, and document the requirements in local directives. Command standard training shall be used when available and applicable to the requirement.
A14.2.2. (Added) Aircraft Egress Cockpit Familiarization.
A14.2.2.1. (Added) Regulatory Documents. AFI 21-101, AFI 91-201, AFI 91-202, and applicable weapon system TOs, job guides and other directives.
A14.2.2.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
A14.2.2.3. (Added) Application. All personnel who are not SSQ-qualified in egress but who access cockpits/cabins, equipped with operational egress systems.
A14.2.2.4. (Added) Initial Training. If command training is not available, local formal training shall be used. Training shall include aircraft safe for maintenance procedures location and installation procedures of egress system safety devices, cockpit entry/exit procedures, procedures for determining whether or not an egress component is expended, emergency procedures associated with an expended egress component, and local maintenance concerns identified by the egress supervisor. If the instructors are not egress qualified, the training shall be witnessed and verified by the applicable SSQ qualifying official or an egress supervisor every 6 months, as a minimum. Follow additional guidance in AFI 21-101 on Egress/Cockpit Familiarization Training.
A14.2.2.5. (Added) Refresher Training. Formal refresher training is required every 24 months and shall include the same information as initial training. Refresher training does not require use of an actual aircraft or mock-up/trainer. Follow additional guidance in AFI 21-101 on Egress/Cockpit Familiarization Training.
A14.2.3. (Added) Aircraft Jet Engine Borescoping.
A14.2.3.1. (Added) Regulatory Documents. Applicable general and weapon system specific technical data.
A14.2.3.2. (Added) Lead Maintenance Wing. OC-ALC, Tinker AFB, Oklahoma.

A14.2.4.3. (Added) Application. Personnel who borescope aircraft jet engines.
A14.2.3.4. (Added) Initial Training. Local formal training shall be used.
A14.2.3.5. (Added) Refresher Training. Refresher training is required every 24 months
A14.2.4. (Added) Aircraft Jet Engine Inlet Inspection.
A14.2.4.1. (Added) Regulatory Documents. Applicable weapons system TOs, job guides, and other applicable directives.
A14.2.4.2. (Added) Lead Maintenance Wing. OC-ALC, Tinker AFB, Oklahoma.
A14.2.4.3. (Added) Application. All personnel who perform flightline jet engine inlet inspections on aircraft with installed engines.
A14.2.4.4. (Added-AFMC) Initial Training. Local formal training shall be used.
A14.2.4.5. (Added) Refresher Training. Formal refresher training is required every 24 months.
A14.2.5. (Added) Aircraft Marshaling.
A14.2.5.1. (Added) Regulatory Documents. AFI 11-218, TOs, job guides, and other applicable directives.
A14.2.5.2. (Added) Lead Maintenance Wing. WR-ALC, Robins AFB, Georgia.
A14.2.5.3. (Added) Application. All personnel who perform flightline aircraft marshaling.
A14.2.5.4. (Added) Initial Training. Local formal training shall be used.
A14.2.5.5. (Added) Refresher Training. Refresher required every 24 months.
A14.2.6. (Added) Confined Space.
A14.2.6.1. (Added) Regulatory Documents. AFOSH 91-25, Confined Spaces, T.O. 1-1-3, <i>Inspection and Repair of Aircraft Integral Tanks and Fuel Cells</i> , and other applicable directives.
A14.2.6.2. (Added) Lead Maintenance Wing. WR-ALC, Robins AFB, Georgia.
A14.2.6.3. (Added) Application. Personnel who enter, attend, test, monitor, or supervise entry into documented confined spaces as outlined in AFOSH 91-25 and T.O. 1-1-3.

A14.2.6.4. (Added) Initial Training. Formal training shall be used. Entrant authorities, entrants and attendants shall also complete site-specific training.
A14.2.6.5. (Added) Refresher Training. Site-specific refresher training is required every 12 months.
A14.2.7. (Added) Weapons/Explosive Safety Training.
A14.2.7.1. (Added) Regulatory Documents. AFMAN 91-201, AFI 91-202, and other applicable safety and technical directives.
A14.2.7.2. (Added) Lead Maintenance Wing. OO-ALC, Hill AFB, Utah.
A14.2.7.3. (Added) Application. All personnel who operate, handle, transport, maintain, load, or dispose of missiles, explosives or nuclear weapons.
A14.2.7.4. (Added) Initial Training. Initial training shall include all information required to safely perform the job. Initial training is required prior to performing these duties
A14.2.7.5. (Added) Refresher Training. Follow established guidance in AFI 91-202, <i>The US Air Force Mishap Prevention Program</i> .

Table A14.3. (Added) SSQ Guide and Worksheet

SSQ GUIDE AND WORKSHEET (FOR ALCS ONLY)
A14.3.1. (Added) SSQ Guide and Worksheet. An SSQ guide and worksheet shall be developed for all command and local SSQs using the formats in Figure A14.3.1. and Figure A14.3.2. (Added). Format and content can be adjusted to meet specific qualification needs as long as the intent of all requirements is met as they apply to the SSQ. At a minimum, SSQ guides and worksheets shall be reviewed every three years for accuracy and completeness of stated requirements and references.
A14.3.2. (Added) SSQ Qualification/Re-qualification Guide. The SSQ Qualification Official shall use the SSQ guide to identify all SSQ requirements. This guide shall be used every time SSQ qualification or re-qualification is accomplished.
A14.3.3. (Added) SSQ Qualification/Re-qualification Worksheet. The SSQ Qualification Official shall use the SSQ worksheet as a standard for documenting the employee's demonstrated level of proficiency on each step in the required task. The employee shall demonstrate proficiency to the level required on the worksheet. The SSQ worksheet shall be used each time SSQ qualification or re-qualification is accomplished.

Figure A14.3.1. SSQ Guide**SSQ:** (Title)

(Guide Number)

SKILL/GRADE: Aircraft Mechanic, WG 8852-10 or higher.

APPLICABLE TO: Applies to all personnel who repair, service, store, transfer, purge, bleed, vacuum, pressure check or otherwise handle or use liquid or gaseous oxygen in maintenance tasks. Duties, such as removal and installation of lines, pressure relief valves, regulators and converters removed from the aircraft during the depot maintenance process, prior to pressure check and purging are considered to be ancillary duties and do not require SSQ. Personnel performing these ancillary duties must be trained to the extent necessary to safely perform the tasks (not to the SSQ required level). It also applies to personnel who perform maintenance on liquid and gaseous oxygen equipment (such as removal and installation of lines, pressure relief valves and regulators, purging, bleeding, vacuuming, and pressure checks). Other ancillary tasks can be included as locally determined.

QUALIFICATION OFFICIAL CRITERIA:

- Shall be Subject Matter Expert (SME) in the skills they support.
- Shall be appointed in writing by the Maintenance Wing or the Group supported.
- Shall be SSQ qualified in the skill supported or possess the necessary credentials required by the SSQ (i.e. degree, professional/industrial certification).
- Shall complete the AFMC SSQ Qualifier Course.

APPLICABLE DIRECTIVES:

- T.O. 1E-3A-2-21-1, Organizational Maintenance, Environmental Control System, 1 September 2003, Change 6, 1 April 2009

TRAINING REQUIRED: See worksheet for required prerequisite training.

QUALIFICATION INSTRUCTIONS: Granted after successful completion of the required training and demonstration of proficiency to an SSQ Qualification Official.

DOCUMENTATION REQUIRED: PAC/TSS

DISQUALIFICATION: Observed deficiencies or deviations from technical data, safety violations, valid customer complaints, failure to maintain the required level of proficiency, or failure to perform the required procedures in accordance with the applicable technical directives can be grounds for immediate disqualification. Initial SSQ qualification requirements shall be met for re-qualification. Retraining and successful demonstration of proficiency to an SSQ Qualification Official shall be required prior to regaining qualification.

RE-QUALIFICATION: Required every 24 months and shall include a demonstration of proficiency to an SSQ Qualification Official.

NOTE: This guide is not technical data and must be used in conjunction with the most current versions of the applicable directives. If changes have been made to the technical data, please notify your PAC Program Manager.

Figure A14.3.2. SSQ Worksheet (Sample).

SSQ <input type="checkbox"/> QUALIFICATION / <input type="checkbox"/> RE-QUALIFICATION WORKSHEET <div style="text-align: center;">PASS <input type="checkbox"/> FAIL <input type="checkbox"/></div>	
<div style="display: flex; justify-content: space-between;"> <u>E-3 GASEOUS OXYGEN (GOX) HANDLER</u> SSQ #002545 </div>	
<div style="display: flex; justify-content: space-between;"> Name: _____ Work Center: _____ </div>	
Prerequisite Training: (Insert trainee's completion date.)	
1. TSS #MTEMAS0002544OJ SOJT E-3 Gaseous Oxygen (GOX) Handler Date Completed: _____	
SSQ performed on: E-3 Oxygen System	
Qualification Objectives are listed below. Document completion of qualification objectives by inserting the qualification official's initials. Proficiency Levels are identified in parenthesis following each objective. The proficiency levels are defined at the bottom of the page.	

Qualification Objective	Initials: SSQ Qual/Off
1. SAFETY PRECAUTIONS AND PROCEDURES	
1a. Complies with all Safety Warnings, Cautions, and Notes contained in, and throughout the specified procedures IAW T.O. 1E-3A-2-21-1, Para 8-1 (3c)	
1b. Ensures personal safety equipment and tools are clean and free of petroleum products IAW T.O. 1E-3A-2-21-1, Para 8-1, 8-19, and Table 8-2 (3c)	
2. OXYGEN SYSTEM MAINTENANCE	
2a. Bleeds the Oxygen system IAW T.O. 1E-3A-2-21-1, Para 8-34 (3c)	
2b. Purges Oxygen supply system IAW T.O. 1E-3A-2-21-1, Para 8-32 (3c)	
2c. Purges Oxygen distribution system IAW T.O. 1E-3A-2-21-1, Para 8-34 (3c)	
2d. Performs operational test for panel mounted regulators IAW T.O. 1E-3A-2-21-1, Para 8-22 (3c)	
2e. Performs portable Oxygen system checkout IAW T.O. 1E-3A-2-21-1, Para 8-23 (3c)	

Is the individual being Qualified, a Qualifying Official? YES _____ NO _____	
SSQ Employee Name (print): _____	
SSQ Employee Signature: _____	Date: _____
SSQ Qualifier Name (print): _____	
SSQ Qualifier Signature: _____	Date: _____

Table A14.4. (Added) Instructions for AFMC Form 959 (Electronic or Hand Scribed)

INSTRUCTIONS FOR AFMC FORM 959 (Electronic or Hand Scribed) (For ALCs only)		
Mandatory entries are identified as REQUIRED. The following information will be entered in the appropriate blocks.		
Figure A14.4.1. Instructions for AFMC Form 959.		
BLOCK #	TITLE	CONTENT
1.	Date	REQUIRED: Enter Date.
2.	Job Order Number	REQUIRED: Enter the control number and job designator (the three digits JON suffix will be inserted when the item is scheduled for work).
3.	Quantity	Enter the quantity.
4.	Production	REQUIRED: Enter the symbol for the responsible Section/RCC performing production section/RCC.
5.	Date Scheduled	REQUIRED – SCHEDULER: The scheduling function or the mechanic enters the date when the items are placed into work.
6.	Date Completed	REQUIRED – SCHEDULER: The scheduling function or the mechanic enters the date after the work is complete.
7.	Part Number	Enter the part number. When the WCD is for more than one part then all part numbers, NSNs and

		production numbers can be listed, blocks 12 and 17 can be used for continuation. When multiple part numbers are listed, the scheduling function designates part number, NSN, and control number combination for the item by circling the appropriate part when block five is completed.
8.	Tech Data	REQUIRED: Enter the primary technical data source. Independent technical data that does not fall under the primary will be entered in block 17.
9.	Item Serial Number	Leave blank. The scheduling function enters the serial number.
10.	Mission Design Series	REQUIRED: Enter the MDS when the item is routed from an aircraft, engine, or other major end item.
11.	Stock Number	Enter the complete stock number to include the MMAC if applicable. If not stock listed, so state.
12.	Optional	Optional. Specify in local instructions.
13.	Serial Number	REQUIRED: Aircraft tail number.
14.	Noun	Enter the nomenclature identifying the item.
15.	Dispatch Station Skill Code	Enter the dispatch station number. When routed to more than one building, include building numbers. REQUIRED: Enter skill code for the task being performed.
16.	PDN/OP Number	REQUIRED: Enter the performing RCC if different from block 4 and Ops numbers from labor plan. Do not duplicate numbers.
17.	Work to be Accomplished	REQUIRED: Enter description of work and if applicable technical data and usage. Secondary certification tasks must be listed separately.
18.	Mechanic	REQUIRED: PAC certification codes M & N and inspection codes E & I. The mechanic stamps and dates the completion of the operation/task. When task is administrative in nature an X code will be designated.
19.	P	Supervisor verification P stamp will be entered when

		required. The Supervisor stamps and dates at the completion of the required inspection/verification. Secondary certification block for E and I codes. The mechanic stamps and dates at the completion of the operation/task.
20.	Q	Quality Inspection code Q. The COR stamps and dates at the completion of the required inspection/verification.
<p>NOTE: The contents of blocks 15, 16, 17, 18, 19 and 20 will be determined by the Production Planning Team.</p> <p>All operations/tasks must be certified as complete by stamping and dating in the appropriate blocks.</p> <p>For aircraft/missiles or commodities planned operations the Planner is the only one authorized to delete or negate a planned requirement. Planners will annotate, stamp and date the WCD in the task description block.</p> <p>When a task listed on a WCD is not or will not be accomplished, an annotation of Not Required (NR), Not Applicable (NA), Previously Complied With (PCW), or Satisfactory As Is (SAI) will be indicated in the applicable task description block. Any aircraft specific technician or mechanic annotating on a PDMSS WCD an operation as NR, NA, PCW, and SAI will notify the Production Supervisor or Planner and place an informational note in the task description block explaining why the task was not accomplished. The technician or mechanic will stamp and date the WCD in the task description block, not the PAC certification block.</p> <p>Any person other than the Planner will identify the PDN or OPS number in the next open line (Block 16) and provide a brief statement as to why in Block 17.</p> <p>When the electronic generated version of the AFMC Form 959 does not have blocks numbered and arranged as described above, local procedures should be developed to ensure essential elements are captured and accountability is maintained by the creation of a complete audit trail.</p>		
21.	Final Destination	Enter the destination or dispatch station and functional code of the RCC responsible for disposition of routed item.
22.	Coordination/Initiating RCC Signature/Date	REQUIRED: Enter the office symbol, date, and signature of the Production Planning Team representative.
23.	Document S/N	Enter the serial number of the Form as required.

Sequential numbering may be used or this number can be used along with the publication date to control Form revisions. It can also be used for suspense or other tracking purposes.

Table A14.5. (Added) Instructions for Completing Unpredictable/Handscribed AFMC Form 173

INSTRUCTIONS FOR COMPLETING UNPREDICTABLE/HANDSCRIBED AFMC FORM 173 (For ALCs only)		
The instructions provided below are the mandatory and basic requirements for completing a handscribed (pen and ink) AFMC Form 173.		
These instructions will also apply for the same elements and data fields for an Unpredictable AFMC Form 173 when it is generated through an approved AFMC data system (i.e. PDMSS (G097). When the electronic generated version of the AFMC Form 173 does not have blocks numbered and arranged as described above, local procedures should be developed to ensure essential elements are captured and accountability is maintained by the creation of a complete audit trail. Additional information for explanation of the G097 can be found at the URL site: https://www.ilspo.wpafb.af.mil/g097/ and in the DM-SUM-A007-020; Software User's Manual.		
Mandatory entries are identified as REQUIRED and are identified specifically when required. Any person initiating an AFMC Form 173 should make every effort to complete as many blocks as possible when knowledgeable of the requirement.		
Figure A14.5.1 Instructions for Completing AFMC Form 173.		
BLOCK #	TITLE	CONTENT
1	Date	REQUIRED - INITIATOR: Date initiated
2	Skill Code	REQUIRED - Primary skill code required to complete the task/operation.
3	Operation Number	REQUIRED - SCHEDULER. Operation Number will be unpredictable or Over and Above as determined by the MRT.
4	JON Number	REQUIRED - Job Order Number for the aircraft.
5	Standard Hours	REQUIRED - PLANNER: Planner reviews defect, verifies technical data, checks for follow-on maintenance, and applies an estimated standard.
7	Number of	REQUIRED - Number of workers required to do the task.

	Workers	
8	Area	Location of discrepancy on the A/C.
12	Work Category Description	REQUIRED - Work Category Description (Unpredictable, O&A, Shakedown, etc.).
19	RCC	REQUIRED - Resource Control Center (Coincides with Skill).
22	Date Completed	MECHANIC. Numeric Day, Month, Year (DD/MM/YY).
23	Work Unit Code	REQUIRED - 5 digits, alphanumeric code used to identify the system, subsystem and component which are being worked.
26	How Mal	3 digits, numeric code used to describe the equipment malfunction.
29	Inspection Code	REQUIRED - SUPERVISOR/MRT PLANNER: PAC certification code.
30	Facility Code	System Requirement for Capacity Utilization.
31	Description	REQUIRED - INITIATOR: Detailed description of discrepancy and technical data reference. REQUIRED - Task description and technical data reference required to perform corrective action for the discrepancy identified. Specify if the task is critical or non-critical.
36	Mechanic Stamp	REQUIRED - PRODUCTION MECHANIC: PAC Code identified in Block 29 indicates level of certification/inspection required. The responsible mechanic stamps and dates at completion of the operation/task.
37	Production Certifier	REQUIRED - PRODUCTION MECHANIC: When PAC Code identified in Block 29 indicates Secondary Certification required the mechanic stamps and dates at completion of the operation/task.
38	Quality Inspection	Quality Q stamps and dates at completion of verification/inspection when specified in Block 29.

39	Scheduler	REQUIRED - SCHEDULER: Stamp and date document after verification to indicate that all required entries have been completed and certification blocks have been stamped as required.
40	Initiator	REQUIRED - INITIATOR: Name. Mechanic, Planner, Supervisor.
Local procedures shall be developed for MRT and PAO approval of unpredictable/handscribed AFMC 173 if an electronic system is not used.		

Table A14.6. (Added) Guidelines For Preparing A Process Order

GUIDELINES FOR PREPARING A PROCESS ORDER (For ALCs only)	
Purpose —A brief reason for the process order.	
Scope —Describe the scope.	
General Information —This section provides information about the overall process. Process orders are either oriented to a specific process or to a component. Content depends upon the complexity and criticality of the process. If a process order contains verbatim technical data information the technical data number, basic date, change date, and change number shall be identified on the first page of the AFMC Form 561 in block 11, instructions under the heading “technical data reference”. Suggested content for these two kinds of process orders is as follows:	
Process oriented:	
- Process references.	
-- Military/commercial standards that apply.	
-- Quality plan.	
-- Other directives and operating procedures that applies.	
- The typical production sequence or flow.	
- The method or procedure to qualify the process (e.g., first article, certification team, etc.).	
- Process controls that will be used.	
-- The method and frequency of sampling.	
-- Specific quality requirements.	
-- Limits for product characteristics.	
-- Any general parameters that apply.	
- Equipment.	
-- The equipment capabilities and work environment.	
-- The installation requirements and qualification.	
-- Preventive maintenance requirements.	
- The procedure for qualification of the process and approval methodology.	
- List of process operation sheets and/or other procedure specifications.	

- Non-conforming material or process results.
- List of applicable Process Operation Sheets (POS) and/or Procedure Specifications.
Component oriented:
- Title.
-- Name of part/process POS as applicable.
-- Date of original issue.
-- Reaffirmed date.
-- Revision number.
-- The part numbers the process order supports.
-- The technical data that applies.
-- Clear and concise instructions on how to perform the operations on the components (note: all requirements must be consistent with the applicable technical data).
-- Any critical considerations or other workmanship criteria (secondary certification may be required on the WCD).
Procedure —This is the how-to instruction to include cautions and warnings that apply.
- Title.
- Name of part/process POS as applicable.
- Date of original issue.
- Reaffirmed date.
- Revision number.
- The Part Number applicable.
- T.O. reference will be identified to the specific TO paragraph when verbatim information is utilized.
- Specific component repair equipment parameter settings.
Safety Notes —Identifies any steps or materials that present safety hazards to include environmental impact.
Coordination —List the coordination required for the process order.
As a minimum the following organizations will coordinate, sign, and date the process order:
- Production
- Planner
- Quality Assurance
- Safety
- Applicable Engineering Organization
- As required other organizations may be requested to coordinate, sign, and date the process order. Local procedures shall be developed for the coordination of electronic generated Process Orders and WCDs.
NOTE: The applicable engineer is the equivalent of the group commander for ALC process

orders IAW TO 00-5-1.

The completed process order is approved by the chief of the responsible engineering function by signing block 13, Approval. This organization is the Office of Primary Responsibility (OPR) for the process order.

Table A14.7. (Added) Inspection/Certification Codes

INSPECTION/CERTIFICATION CODES (For ALCs only)	
<p>The codes identified below are the only inspection/certification codes authorized for use on depot maintenance WCDs. Any maintenance personnel that certify depot maintenance WCDs will stamp and date each required certification. Stamp impression must be legible and will not obliterate any other stamp impression already applied to the document. Only stamps issued by the applicable organization Stamp Monitor will be used for the certification of depot maintenance WCDs.</p>	
<p>NOTE: On tasks/operations where secondary certification has been determined the “E” code is used when technical data conformance “can” be verified after work completion. The “I” code is the most critical of all inspection/certification codes and shall not be skipped over to perform another dependent operation. The “I” code is used when technical data conformance “cannot” be verified after work completion.</p>	

Figure A14.7.1. Inspection/Certification Codes.

M	Requires certification by ONE PAC Certified Mechanic.
E I	Requires certification by TWO PAC Certified Mechanics. E for end process/product certifications. I for in-process certifications
N	Requires certification by ONE Nondestructive Inspections (NDI) PAC certified mechanic.
Q	Requires certification by ONE Quality Assurance Specialist for inspection/verification.
D	Identifies required review by a DCMA inspector/evaluator.
X	Certification <u>not required</u> . This code will be used for tasks that are administrative in nature. This code will NOT be applied to any maintenance task. Tasks that are administrative in nature include but are not limited to those that are: informational in nature, used for scheduling (trigger operations) tasks, non-maintenance related time tracking, etc. When the X certification/verification code is used the technical data usage statement <i>No Technical Data Required, or equivalent</i> , does not have to

be annotated on the WCD.
UPDATE STAMPS KEEP MEASUREMENTS/DIMENSIONS
Each ALC, including AMARG, shall develop a local supplement and insert samples of stamps impressions used at their specific ALC.

Table A14.8. (Added) Instructions For Completing Unpredictable AFMC Form 500
INSTRUCTIONS FOR COMPLETING UNPREDICTABLE AFMC FORM 500
(For ALCs only)

The instructions provided below are the mandatory and basic requirements for completing a handscribed (pen and ink) AFMC Form 500.		
Figure A14.8.1. Instructions for Completing AFMC Form 500.		
BLOCK #	TITLE	CONTENT
	Date	Enter date in upper right hand block
1	Identify WCD Control Number(s)	Enter the Task, Operation(s) and/or Production Number (PDN); i.e. 67387A, 00069B. If PDN has not been assigned by 801/206, enter "TBD" and the NSN, P/N Weapon System, etc.
2	Identify WCD Number/Operations(s)	Enter the DCD and/or WCD number; i.e. Y0001R, I000D. If the WCD number has not been assigned, enter "TBD" and the NSN, P/N Weapon System, etc.
3	Primary Format Used	Select appropriate box. If the system is not listed, select "OTHER" and enter system in the next block; i.e. MPCS (D012). NOTE: AFMC is for AFMC Form 959.
4	Planning Reason	Select appropriate box to indicate type meeting. If not listed, select "OTHER" and enter type in next block.
5 thru 8	Check Appropriate Box For Each Question	Select appropriate box to the right of each question. If additional questions and/or information are required other than those in Blocks 5-8, annotate in Block 9. Justification for "N/A" or "NO" selection for Blocks 5-8 can also be annotated in Block 9.
9	Identify PPT Names and Phone Numbers	Electronic signature is authorized. Each PPT member will enter name, contact phone number,

		<p>select "CONCUR", NON-CONCUR" or "N/A" and sign and date electronically. The last member to sign electronically will email AFMC Form 500 to the appropriate Planner.</p> <p>NOTE: Date can be entered in the "NAME" block along with name or "CONTACT PHONE" block along with phone number. Then click "EMAIL" button at top of form which will set up an email with the AFMC Form 500 as attachment to send to next "Specialty" member. AFMC Form 500 must be signed and dated to be considered complete. If block # 10 is accomplished manually, please ensure all blocks are completed and that it is signed and dated in the "SIGNATURE" block. Also, PAC manager/monitor can sign in Block 10h if required.</p>
10	Comments	Annotate all PPT supporting documentation and detailed meeting information; i.e., PPT Chairperson name, document changes to WCD, critical tasks/operations and justification, IAW, T.O. info, tools, manpower, equipment, labor hours, 202s, 252s, process orders, etc. Annotate in this block the list of attendees.

Table A14.9. (Added) Codes

CODES	
Routing Identifier Codes for ICPs:	
<u>Air Force Air Logistics Centers:</u>	
FGZ	Ogden, UT.
FHZ	Oklahoma City, OK.
FLZ	Warner Robins, GA.
Supply Status Codes:	
BA	Processed for release and shipment
BB	Backorder to Source of Supply
BC	Back ordered; long delay expected
BD	Delay pending requirements verification
BM	Being moved from within Base Supply/DLA to the Production Support Flight
CC	Order cancelled
CJ	Item obsolete

Table A14.10. (Added) Activity Heirarchical Decomposition Work Breakdown Structure

ACTIVITY HEIRARCHICAL DECOMPOSITION WORK BREAKDOWN STRUCTURE (WBS)
This section reserved for update of the WBS.

Table A14.11. (Added) Information Systems Interfacing

INFORMATION SYSTEMS INTERFACING
Personnel operating within the repair process use numerous DoD and USAF legacy systems. Specific legacy system descriptions are:
CAVAF: COMMERCIAL ASSET VISIBILITY - AIR FORCE (CAVAF) provides visibility of assets at commercial contractor facilities, status reporting and capability to process transactions received from asset management subsystem. The status transactions reported are: receipt at a contractor's facility, induction into repair, completion of maintenance, shipment, not economically reparable, request for disposition instructions, scrap transaction, and disposition of non-reparable assets, and visibility of NWRM assets. The system uses a standard 180 days for turnaround at a contractor's facility, from the date of induction. There is no provision for reflecting the contractual due date, nor for projecting changes in shipping dates.
MABSM: IMPRESSA system (MABSM) is a commercial-off-the-shelf (COTS) Enterprise Resource Planning (ERP) system that includes a Maintenance, Repair and Overhaul (MRO) module which integrates with Manufacturing and Financial applications. It provides users with access to enterprise-wide information and utilizes a web-based user interface. MABSM is used primarily to manage maintenance functions within the 309 Maintenance Wing at OO-ALC/Hill Air Force Base, Utah. It is currently used to support the 309 Commodities Management Group CMXG/CL consisting of Power Systems, Hydraulics, Landing Gear, New Tech Repair and MMXG/CC Missiles group. The software system name is IMPRESA and the software release is 7.30.10. The database configuration is Oracle 11.1.0.7 64 bit (11g). The hardware platform is HP Proliant DL585. The operating system is Red Hat Enterprise/Linux AS (64 bit). The hardware is located and managed at Hill Air Force Base, Utah within the IT organization. The system is CAC enabled with single sign-on (SSO) capability. Access to the system is granted via account/password only when a form DD2875/SAAR has been approved and processed. Users at locations outside of the Hill2K domain can access the system with proper security and firewall access approvals. The system is capable of enforcing report and form level security for government approved vendors, typically used for vendors working on site at a HAFB location.
D002A: INTEGRATED LOGISTICS SYSTEM – SUPPLY (ILS-S) provides Joint Command and Air Force warfighters with global visibility of base-level weapon system parts, and other supply assets for planning and accomplishing real-time combat operations world-wide. It is comprised of the following supply applications: Standard Base Supply System (SBSS), Standard Asset Tracking System (SATs), Air Force Supply Centralized Database

(AFSCDB), and Enterprise Solution Supply (ESS). ILS-S supports 15,000 plus supply customers and is an integral part of Air Force Supply Chain Management and Chief Financial Officer financial accounting. ILS-S provides direct supply support to Active, Guard, and Reserve forces anywhere in the world in support of peacetime and wartime operations. ILS-S is a Non ACAT, Mission Assurance Category I (MAC I) sustainment program. It is scheduled to be replaced by the Expeditionary Combat Support System (ECSS) in FY12. In the interim, the ILS-S applications identified above will be maintained as necessary to ensure continued supply support to the war fighter.

D035A: ITEM MANAGER WHOLESALE REQUISITION PROCESS (IMWRP) provides a uniform item management capability for worldwide property accounting, inventory control, and distribution/redistribution of material at the wholesale level. Requisitions and related transactions are processed in support of AF bases, security assistance program, other services/agencies, contractors and depot supply. Document control is maintained to ensure that the customer requisition is fully satisfied. Balances are adjusted as a result of redistribution orders, material release orders, capitalization/recapitalization actions and logistics transfer actions. Reports of excess are processed on consumable, equipment and recoverable items.

D035B: WHOLESALE MANAGEMENT AND EFFICIENCY REPORTS (WMER) provides transaction history data and management data products for AF managed material. Produces logistics performance information, supply availability and workload analysis reports, indicating supply effectiveness relative to demands placed on the USAF Logistics System. Measures the AFMC requisitioning pipeline, by segment, against Department of Defense (DoD) time standards from date of requisition to date materiel is available for shipment. Provides management with performance data at various levels throughout AFMC and HQ USAF.

D035C: REPORTABLE ASSET MANAGEMENT PROCESS (RAMP) has been formally decommissioned, however the Data Systems Designator (DSD) name is retained to represent RAMP functionality in D035 within CDRS, only. RAMP receives and summarizes transactions indicating materiel usage, providing base repair cycle time and usage data for the recoverable consumption item requirements system. Maintains visibility of AF-owned recoverable assets and levels by reporting location, and provides visibility of reparable items in transit between operating accounts until a receipt has been acknowledged by the accountable receiving activity.

D035E: READINESS BASED LEVELING (RBL) is being used for Interface Control Document (ICD) purposes to document RBL specific interfaces of D035 within CDRS only. RBL computes users' stock levels for selected recoverable items and provides the levels to the recorded users. When received, the levels are loaded and used in the requisitioning process.

D035J: FINANCIAL INVENTORY ACCOUNTING AND BILLING SYSTEM (FIABS) provides financial recording for the accountable item inventory balance of AF investment items and items in the general support, system support, and reparable support divisions of the AF stock fund. Reflects the dollar status of stock fund general ledger.

D035K: WHOLESALE AND RETAIL RECEIVING AND SHIPPING (WARRS) is a legacy mainframe D035 subsystem that provides retail customer support including bit-and-piece parts and end-item support to depot maintenance. Maintains historical data for all accountable depot retail transactions and for Air Force receipts into the depot and for shipments out of the depot.

D087X: EXECUTION AND PRIORITIZATION OF REPAIRS SUPPORT SYSTEM (EXPRESS) provides a single ALC integrated priority list of all repair requirements, determining ability of existing resources to support repair actions, and providing the data and mechanism to move items into repair. Prioritization of Aircraft Repairables (PARS) prioritizes repair and distribution of assets to the users from the source of the consolidated serviceable inventory (CSI). EXPRESS Prioritization Processor (EPP) sets priorities for the repair of items which are not addressed in PARs and combines all into a single integrated list for each repair shop. Assets which do not have aircraft availability goals are prioritized using a deepest-hole logic to try to fill the most critical need. EPP provides list to the Distribution Module to identify prepositioning actions for serviceable parts as they come out of repair. The Supportability Module takes the EPP list and determines whether the required items can be repaired based on 4 evaluation criteria availability: carcass, repair parts, repair funds, and repair resources. Items meeting all criteria are entered onto the D035K EXPRESS Table for transfer to the shop.

D200A: REQUIREMENT MANAGEMENT SYSTEM (RMS) computes procurement requirements for spares and determines depot level maintenance repair needs for the Air Force. RMS forecasts and controls procurement and repair requirements of materiel needed for logistics support of weapon systems operated by the Air Force. RMS maintains visibility on all recoverable and consumable spares while computing buy and repair requirements on a quarterly cycle and contains a Central Secondary Item Stratification process which compares peacetime and war readiness assets against requirements for Air Force recoverable and consumable items and produces the Supply System Inventory Report (SSIR), an annual report to Congress on the status of Department of Defense (DoD) on-hand inventory at the end of each fiscal year. RECOVERABLE ITEM SIMULATION CAPABILITY (RISC) provides the ability to re-compute selected recoverable consumption items (simulation of D200A).

D230: MATERIEL PROCESSING SYSTEM (MPS) enables mechanics to automatically request material on the shop floor, immediately notifies the planner for approval, and provides the ability for Production Material Technicians/Forward Logistics Specialists to review the status of all orders placed, as well as correct and process orders with error conditions returned. MPS is intricately tied to the schedule execution and PDM workload management system for aircraft and missiles, and performs material planner support for commodities.

G004L: JOB ORDER PRODUCTION MASTER SYSTEM (JOPMS) initiates and manages the Job Order Number (JON) which is required to begin a maintenance task on the shop floor. The system creates and tracks work in progress, interfaces with financial systems providing

visibility of production hours in process and completed (earned hours), provides a repository for storing the production number master records, tracks customer work requests, record work authorizations, maintain temporary work plans, records end item production, and documents standard labor hours earned during depot level maintenance.

G005M: DEPOT MAINTENANCE MATERIEL SUPPORT SYSTEM (DMMSS) identifies material that must be pre-positioned to support maintenance workloads and manages the BOM, which is required for planning for material in support of production maintenance workloads, initiating costing for the depot maintenance systems, and providing a mechanism to control material usage.

G019C: MISTR REQUIREMENTS SCHEDULING AND ANALYSIS SYSTEM - MISTR provides maintenance with scheduling and analysis data on Management Items Subject to Repair (MISTR) reparable items. Schedules and tracks MISTR items and provides management information necessary to respond to the turn-around required by the repair cycle. The system also produces MISTR schedules that are distributed to maintenance for scheduling repair operations by individual stock number and control number.

G037F: WORKLOAD ANALYSIS PLANNING DATA SYSTEM (WAPDS) is now an OC-ALC site unique that generates MDS input/output schedules and workload analysis reports for aircraft (LA) and financial (FM) organizations. The maximum quantities in work, monthly input quantities, and learning curves in order to compute aircraft input internal. In addition, a method is provided to summarize the skill and labor standards received from projections of critical path data. The summarized standard data is applied to the input/output schedule producing a graphic representation of the scheduled workload and a computation of monthly work requirements. The requirements are stated in both standard man-hours and personnel equivalents. The system objective is to support the workload analysis process with computer prepared reports and graphics giving optimized input/output schedules, estimated labor standards, critical path facility usage, workload analysis for planned labor applications, and historical analysis.

G081: MALFUNCTION DETECTION, ANALYSIS & RECORDING SYSTEM/GRD PROC SYSTEM (MADARS) provides in-flight aircraft status and troubleshooting info while generating a permanent record of LRU status. MADARS shows current performance of selected systems, performs engine health diagnosis, identifies discrepant LRUs, records trend data, determines its own health, calibrates the total monitoring system and provides for data storage and retrieval. A GRD computer system processes in-flight data recorded on tapes, evaluates the trend data, and develops programs to utilize the experience data. System supports base level and logistics for the C-5A/B, C-141, C-17 at AMC bases, Air Force Reserve (AFR) bases and Air National Guard (ANG) bases.

G097: PROGRAMMED DEPOT MAINTENANCE SCHEDULING SYSTEM (PDMSS) is the AFMC depots standard project management system used to manage execution of all aircraft programmed/unprogrammed depot maintenance and overhaul workload performed for the warfighter. PDMSS performs planning, maintenance operation resourcing and completion, critical path schedule execution, and performance management and is the critical

workload management system for aircraft and missile planners, schedulers, and maintenance technicians.
G337: INVENTORY TRACKING SYSTEM (ITS) tracks repairable end items from time of induction into the depot to time of turn-in. It provides inventory control and assigns item tracking numbers to all parts as they come in and subsequently tracks them through disassembly, repair, and assembly.
G402A: EXCHANGEABLES PRODUCTION SYSTEM (EPS) links the maintenance shop floor personnel to Depot Supply for ordering and issuing direct and indirect material, and track maintenance transactions in process. It also provides visibility of workload requirements and end item asset availability. Users of the system are maintenance personnel, planners, schedulers, and cost analysis personnel.
J025A: AUTOMATED PROJECT ORDER FORM SYSTEM (APO) automates the AFMC 181 process/coordination and provides an automated routing control for the next in line process step. Emphasis of the system is to provide access for the status of documents as approved, rejected, or canceled; for extraction of summarization data; access to historical data and reports.

ATTACHMENT 15 (Added)

NON-STANDARD ORGANIZATION (NSO)

A15.1. (Added) Table A15.1. (Added) prescribes NSO guidance and procedures. The chapters and paragraph numbers in **Table A15.1.** coincide with or add supplemental guidance and must be used in conjunction with AFI 21-101. Throughout the table the civilian equivalent (unless no civilian may hold the position) may be applied to any reference to a military rank, grade or position. DEV – The following chapters in AFI 21-101 do not apply to NSO's; **Chapter 4, Chapter 5, Chapter 6, Chapter 7, Chapter 11, Chapter 13, Chapter 15, Chapter 16 and Chapter 17.** The term NSO refers to Arnold Engineering and Development Center (AEDC), Electronic Systems Center (ESC) Cryptologic Systems Division (CPSD) Technical Applications Products Section (ESC/HNCBM) and Consolidated Signals Intelligence Support Activity Logistics Section (ESC/HNCBS), Air Force Nuclear Weapons Center (AFNWC), Aeronautical Systems Center (ASC), and 46 Test Group (CPSD is exempt from **Chapter 12 and Chapter 18**).

Table A15.1. (Added) NSO Maintenance Management

NSO
Chapter 1 - MANAGEMENT PHILOSOPHY AND POLICY
1.4. Maintenance Concept. The AF requires varying degrees of maintenance capability at different locations. Maintenance capability depends upon mission requirements, force protection, economics of repair, transportation limitations, component reliability, workload agreements, facility requirements, frequency of tasks, and special training required. This capability is described (in order of increasing capability) as either organizational, intermediate, or depot.
1.4.2. (Added) Organizational - First level of maintenance performed <i>on-equipment</i> (directly on aircraft or support equipment) at flightline level. This level generally includes repair, inspection, testing, servicing and/or calibration. Organizational level maintenance is part of the MGN.
1.4.3. (Added) Intermediate - Second level of maintenance performed <i>off-equipment</i> (on removed component parts or equipment) at backshop level. Primarily testing and repair or replacement of component parts. This level also includes Centralized Repair Facilities (CRFs). Intermediate level maintenance is part of the RN. Refer to 1.4.6.
1.4.4. (Added) Depot - Third level of maintenance performed on- or off-equipment at a major repair facility. Highest level of maintenance for more complex repairs. Depot level maintenance is part of the RN. Refer to 1.4.6.
1.4.5. (Added) Standard maintenance units and operational test units that possess non-traditional aircraft maintenance Air Force Specialty Codes (AFSC) such as 3DXXX, Communications/Electronics Systems career field, who perform maintenance on aircraft or aircraft support systems, must comply with the requirements identified within this instruction. In the event of a conflict with other guidance, this instruction will take precedence.

<p>1.4.6. (Added) Repair Network. The MXGs shall support the development and implementation of the Repair Network Integration (RNI). The Air Force Repair Network is organized into four hierarchical levels; repair enterprise, product repair groups, repair networks and repair nodes. A repair network is a collection of repair nodes within product repair groups that support the repair enterprise. The management of the repair network is comprised of the Repair Network Manager (RNM) (who may reside in the ALC ASD organization) whose role is to oversee and manage a collection of repair nodes within a specific product repair group. Node Managers will reside within the MXG's for all maintenance managed within the wings.</p>
<p>1.4.6.1. (Added) Repair Node. The Air Force Repair Node level is an individual organizational unit within repair network(s). The role of the Node Manager is to oversee and manage all shop activities pertaining to a specific Repair Node. The Node Manager shall:</p>
<p>1.4.6.1.1. (Added) Collect Repair Node Capability and Capacity (CAP2) data. The Node Manager will also develop Production Plans to support RNM Workload Plans. The Production Plan shall be provided to the RNM annually and when adjustments are made to the current plan. The Node Manager will provide the RNM with updates to CAP2 IAW workload allocation plans and ensure data accuracy.</p>
<p>1.4.6.1.2. (Added) Manage Repair Node operations to support approved performance goals. The Node Manager shall adjust Repair Node operations as required to meet performance goals. The Node Manager will communicate production deviations which exceed agreed upon upper or lower limits to RNM and chain-of-command. The Node Manager will provide mitigation strategy to address negative performance deviations. The Node Manager will communicate technical requirement changes via established processes to RNM and engineering as they become known.</p>
<p>1.4.6.1.3. (Added) Execute Shaping and Sizing actions as defined in the approved Network Shaping and Sizing Plan as approved by the governance structure. (Shaping and Sizing is a process for recommending a rational structuring of the Air Force's capability and capacity (manpower and infrastructure) to ensure an appropriate amount exists based on current and future mission objectives.)</p>
<p>1.4.6.1.4. (Added) Ensure squadron/group/wing leadership has access to and/or is aware of all communication exchanges with MAJCOMs and RNMs with regard to RNI processes, CAP2 data inputs and workload allocation changes/plans.</p>
<p>1.4.6.1.5. (Added) Participate in CPI activities, and share results with RNM.</p>
<p>1.8. Waiver Request. The Wing Commander/Director or Deputy, or equivalent will coordinate on waiver requests to this instruction. Send waiver requests to afmc.a4.workflow@wpafb.af.mil (AFMC/A4 Workflow) or mail to HQ AFMC/A4, 4375 Chidlaw Rd, Bldg 262 WPAFB OH 45433-5006.</p>

<p>1.10. Performance-Based Activities. Additional guidance on contract surveillance is provided in Chapter 18 to this instruction. Units will identify mission essential services and develop the necessary documents in accordance with DoDI 3020.37, <i>Continuation of Essential DoD Contractor Services During Crisis</i>.</p>
<p>1.10.2.5. (Added) AFMC/PK and AFMC/A4M will designate focal points for organizational, functional, and technical questions pertaining to each performance-based activity program. For HPO designated functions, the Functional Director/Commander (FD/FC) is normally the commander having overall responsibility for the maintenance function. As such, the FD/FC is the designated focal point for all organizational and functional questions pertaining to each HPO.</p>
<p>1.10.3. (Added) Developing Performance-Based Requirements Documents. Performance-based requirements documents (e.g., Statement of Objectives, Statement of Work, Performance Work Statements) focus on desired outcomes and performance standards that communicate what the contractor is asked to provide. Requirements documents provide desired outcomes, performance standards, milestones (if appropriate), and metrics which not only measure the contractor's performance but reflect the management imperatives and initiatives that drive the AF (e.g., Mission Capable Rate) and other key efficiency and effectiveness metrics. Requirements documents do not provide "how to" details that dictate the contractor's organization, management, personnel development, or approach to completing work. The only exceptions are safety, environmental management, and security when the contractor operates on a military installation. Additionally, the contractor is required to follow applicable TOs when performing maintenance. Unlike MEO and HPO, contractor operations and personnel are not supervised by government personnel. Any changes to the scope of the work shall be reflected in an official change to the requirements document, which is provided to the contracting officer for modification of the contract.</p>
<p>DEV 1.12. Maintenance Information Systems (MIS). CPSD is authorized to utilize local systems to satisfy the requirements of paragraph 1.12.</p>
<p>1.13. Communications. An authorized communication system must be selected with the capability to effectively support the maintenance communication requirements, including mobility and host base interoperability IAW AFI 33-202, <i>Network and Computer Security</i>. Wireless LANs (WLANs) must comply with all applicable AF 33-series publications. Radios shall be frequency-programmable. (Applicable to CPSD unless restricted by security guidance.)</p>
<p>1.13.1.1. (Added) Use of personal cell phone or communication devices is authorized in the industrial/production areas except while performing hands-on maintenance activities. Employees will remove themselves from any maintenance activity, aircraft, or high traffic areas prior to using a communication device.</p>
<p>1.13.1.2. (Added) Use of portable music/video players (boom boxes, stereos and other sizable devices), electronic games or other personal electronic hearing impairing devices is authorized in industrial production areas except where audio warning cues are used.</p>

1.13.1.3. (Added) Contractor issued electronic and communication devices will follow the same guidance as official government issued electronic and communication devices.
1.13.2. (Added) MXG/CC, Civilian Leader (CL), Civilian Director (CD), or equivalent must develop communication plans IAW AFI 21-101 showing current needs, how they are satisfied, and the maintenance programming for future needs.
1.22. (Added) Maintenance Management Metrics. Metrics provide a measurement of performance and capability. Leaders, supervisors and technicians must have accurate and reliable information to make decisions. Primary concerns of maintenance managers are how well the unit is meeting mission requirements, how to improve equipment performance, identifying emerging support problems, and projecting future trends. Maintenance management metrics—sometimes called “health of fleet” indicators—are a crucial form of information used by maintenance leaders to improve the performance of maintenance organizations, equipment and people when compared with established goals and standards. Metrics often take the form of an “MC Rate” line chart or a “Dashboard” presenting a gauge of an organization’s effectiveness and efficiency. Properly used, metrics create a roadmap that helps determine where the unit has been, where the unit should be, and how the unit will get there.
1.22.1. (Added) The overarching objective of AF maintenance is to maintain aircraft and equipment in a safe, serviceable and ready condition to meet mission needs. Maintenance management metrics serve this overarching objective and shall be established or maintained by Headquarters AF, Major Commands, Wings and/or Squadrons to evaluate/improve equipment condition, personnel skills and long-term fleet health. Metrics shall be used at all levels of command to drive improved performance and adhere to well-established guidelines. Metrics must be:
1.22.1.1. (Added) Accurate and useful for decision-making.
1.22.1.2. (Added) Consistent and clearly linked to goals/standards.
1.22.1.3. (Added-AFMC) Clearly understood and communicated.
1.22.1.4. (Added) Based on a measurable, well-defined process.
1.22.2. (Added) Analysis is crucial to improving organizational performance and is the key component of the metrics management process. Commanders and maintenance managers must properly evaluate maintenance metrics and rely upon the maintenance analysis section for unbiased information. Analysis sections shall draw upon information from various maintenance information systems for data. The Integrated Maintenance Data System-Central Database (IMDS-CDB), G081 (CAMS for Mobility), Reliability and Maintainability Information System (REMIS), Standard Base Supply System (SBSS), AF Knowledge Services (AFKS), Combat Ammunition System (CAS), and AF/A4-approved command-unique analysis tools are the primary data sources. A good maintenance manager does not manage the metrics, but rather uses metrics to focus resources and personnel to improve maintenance processes. Managers must also clearly understand and communicate the crucial linkage between goals, standards and

metrics. The AF sets goals and standards for organizations, personnel and weapons systems that facilitate evaluation, comparisons and improvements. These standards are published separately by senior leadership and should be clearly understood at all levels of command. Leaders at every level must also support analysis and review metrics to properly drive improved performance. Maintenance analysts manage and track this process, but maintenance metrics, and the resulting improvements they drive, are inherently a leadership responsibility.

1.22.3. **(Added)** AFMC Test Wing maintenance metric focus. Due to the unpredictable nature of the test environment, normal fleet availability and program execution indicators may not portray the most accurate picture of the health of the test fleet. Although the traditional maintenance metrics (MC Rate, Break Rate, etc) arm the maintenance leader with information needed to help effectively manage maintenance resources, the focus of AFMC's test wing maintenance differs somewhat from an operational wing. Therefore, AFMC's focus shifts from the MC Rate, to areas where AFMC's maintenance units have the most control – scheduled maintenance and deviations from the flying and test schedule. The key measurements of how well the maintenance unit manages scheduled and unscheduled maintenance are listed here:

1.22.3.1. **(Added)** Test Schedule Effectiveness (TSE) Rate. Similar to the Flying Schedule Effectiveness for the CAF, TSE is a leading indicator and is a measure of how well the unit planned and executed the weekly flying and ground test event schedule. TSE is derived by comparing each day's deviations to the flying and ground test schedule. Deviations that decrease the TSE from 100 percent include: scheduled sorties/ground test events not accomplished because of maintenance, supply, operations, weather, HHQ, air traffic control, sympathy, or other reasons; scheduled events that actually start more than 30 minutes prior to scheduled start time; scheduled events that begin more than 15 minutes after their scheduled start time and events that are added to the schedule. Disruptions to the flying or ground test schedule, or constant configuration changes to test assets can cause turmoil on the flightline, send a ripple effect throughout other agencies, and adversely impact scheduled maintenance actions.

1.22.3.1.1. **(Added)**

$$\text{TSE (\%)} = \frac{\text{Total Ground and Sortie Events Scheduled} - \text{Total Deviations}}{\text{Total Ground and Sortie Events Scheduled}} \times 100$$

1.22.3.2. **(Added)** Maintenance Deviation Rate (MX Dev). Although all deviations to the test schedule are counted in the TSE calculation, the Maintenance Deviation Rate represents deviations to the flying/ground test schedule that are, for the most part, are within the maintenance community's control. All maintenance late take offs, ground aborts, cancellations, and maintenance additions are counted towards the rate. Although all deviations from the published schedule can cause turmoil on the flightline, maintenance supervision should focus on eliminating or minimizing schedule deviations due to maintenance.

1.22.3.2.1. **(Added)**

$$\text{Maint Dev Rate (\%)} = \frac{\text{Total Maintenance Deviations}}{\text{Total Ground and Sortie Events Scheduled}} \times 100$$

1.22.3.3. **(Added)** Scheduling Effectiveness for Maintenance (SEM). SEM is a primary focus for AFMC. It measures the overall efficiency and effectiveness of scheduled maintenance, as well as the unit's effectiveness in responding to unscheduled maintenance. SEM helps identify turmoil in meeting the wing's test requirements. It is a weighted combination of a unit's Total Scheduling Effectiveness for Maintenance and Maintenance Scheduling Effectiveness rates, both explained below. SEM includes total scheduled test events, both flight and ground. The unit should focus on completing scheduled maintenance events, as scheduled, including documentation, as well as minimizing maintenance deviations to the test schedule.

$$1.22.3.3.1. \text{ (Added) SEM (\%)} = \frac{[(\text{TSEM \%} \times 10) \times 0.7] + (\text{MSE \%} \times 10) \times 0.3}{10}$$

1.22.3.4. **(Added)** Maintenance Scheduling Effectiveness (MSE). This is a leading indicator that measures success in the unit's ability to plan and complete inspections and periodic maintenance, including documentation, on-time per the maintenance plan. Deviations to the plan are recorded. A low MSE rate may indicate a unit is experiencing turbulence on the flightline or in the back shops. This indicator is primarily used as feedback to maintenance managers on the success and adherence to scheduled maintenance plans and actions. To compute the MSE, you must know the number of maintenance actions scheduled and accomplished as scheduled along with each action's weighted value (based on the importance of the event and established by MAJCOM directives).

$$1.22.3.4.1. \text{ (Added) MSE (\%)} = \frac{\text{Total Points Earned}}{\text{Total Points Possible}} \times 100$$

1.22.3.5. **(Added)** Total Scheduling Effectiveness for Maintenance (TSEM) – TSEM is another focus area for AFMC's flightline maintenance community. TSEM measures the effect of maintenance deviations on the test schedule. The TSEM rate only considers schedule deviations caused by the maintenance complex.

1.22.3.5.1. **(Added)**

$$\text{TSEM (\%)} = \frac{\text{Total Gnd and Sortie Events Sched} - \text{Total MX Devs}}{\text{Total Gnd and Sortie Events Sched}} \times 100$$

1.22.4. **(Added)** Traditional Maintenance Metrics. Metrics are often grouped into various categories, including leading or lagging indicators. Leading indicators show a problem first, as they directly impact maintenance's capability to provide resources to execute the mission. Lagging indicators follow and show firmly established trends. Maintenance leaders must review sortie production and maintenance health of fleet indicators constantly and be knowledgeable about maintenance indicators that highlight trends before they become limiting factors. This section lists the primary maintenance metrics alphabetically with a description and the formula for the metric. Referenced Maintenance Status Codes are found in AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*, Attachment 2; Flying Codes are found in TO 00-20-2, *Maintenance Data Documentation*, Appendix L. CPSD will develop procedures for local metrics.

1.22.4.1. (Added) Aircraft Possession. A key factor in metrics involves aircraft “possession.” The AF mandates each aircraft will always be owned or “possessed” by a designated organization. Possession is an indicator of an organization’s or aircraft fleet’s health. Aircraft that are under the control of their owning base are possessed by that organization. An aircraft that flies to depot for maintenance/inspection or is repaired by a depot team at the base is temporarily possessed by depot. In calculating the various aircraft maintenance metrics, possession is calculated in units of hours normally for specific time periods (e.g., monthly, annual).
1.22.4.2. (Added) (Total) Abort Rate (AR). A unit’s abort rate is a leading indicator of both aircraft reliability and quality of maintenance performed. It is the percentage of test events (flown and ground) aborted in the air and on the ground. An abort is a test event that ends prematurely and must be re-accomplished. The abort rate may be measured separately as ground or air aborts. Abbreviations are: GA = Ground Aborts; AA = Air Aborts; and NTI = Non-Test Induced
1.22.4.2.1. (Added)
Total AR (%) = $\frac{\# \text{ Maint GA (NTI)} + \# \text{ AA (NTI)}}{\text{Total Sorties Flown} + \text{Ground Aborts}} \times 100$
1.22.4.3. (Added) Aircraft availability. Percentage of a fleet not in a Depot possessed status or NMC aircraft (that are unit possessed). NOTE: The metric may be created at the Mission Design (MD)/MDS level or may be grouped by fleet (e.g., Aggregate, Bombers, Fighters) to determine “Aircraft Availability”.
1.22.4.3.1. (Added) Availability rate = $\frac{\text{MC hours}^*}{\text{Total Possessed hours}^{**}} \times 100$
(Added) 1. * MC Hours consists of Possession Purpose Codes (PPC): CA, CB, CC, CF, EH, EI, IF, PJ, PL, PR, TF, TJ, ZA, and ZB.
(Added) 2. ** Total Possessed Hours (TAH) consist of the following PPC: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX, CA, CB, CC, CF, EH, EI, DJ, DK, DL, DM, DO, DR, IF, PJ, PL, PR, TF, TJ, XW, XZ, ZA, and ZB
1.22.4.4. (Added) Break Rate (BR). The break rate is a leading, flying-related metric. It is the percentage of aircraft that land in “Code-3” or “Alpha-3” for Mobility AF (MAF), status. This metric primarily indicates aircraft system reliability. It may also reflect the quality of aircraft maintenance performed. If Fix Rates (refer to paragraph 1.15.4.8.) are used as a measurement of maintainability, the Break Rate is the complementary measurement of reliability. For true evaluation of equipment/system reliability, measurements must be taken at the system/subsystem level. It is also an excellent predictor of parts demand. Several indicators that follow break rate are Mission Capable (MC), Total Not Mission Capable for Supply (TNMCS), Cannibalization Rate (CR) and Repeat/Recur (R/R).

1.22.4.4.1. (Added) BR (%) =	<u>Number of Sorties that Land "Code-3"</u>	x 100
	<u>Total Sorties Flown</u>	
1.22.4.5. (Added) Cannibalization Rate (CR). The CR is a leading indicator that reflects the number of cannibalization (CANN) actions (removal of a serviceable part from an aircraft or engine to replace an unserviceable part on another aircraft or engine or to fill an Readiness Spares Package (RSP)). In most cases, a cannibalization action takes place when the Logistics Readiness Squadron (LRS) cannot deliver the part when needed and mission requirements demand the aircraft be returned to an MC status. The CR is the number of cannibalization actions per total sorties flown. This rate includes all aircraft-to-aircraft, engine-to-aircraft, and aircraft/engine to RSP cannibalization actions. Since LRS relies on the back shops and depot for replenishment, this indicator can also be used, in part, to indicate back shop and depot support.		
1.22.4.5.1. (Added) CR (%) =	<u>Number of Aircraft and Engine CANNs</u>	x 100
	<u>Sorties Flown</u>	
1.22.4.6. (Added) Deferred (or Delayed) Discrepancy (DD) Rate (DDR). The DDR is a leading indicator that should be closely evaluated in comparison to other metrics. This rate represents the average deferred discrepancies across the unit's average possessed aircraft fleet. Discrepancies are considered deferred when: a) they are discovered and the decision is made to defer them, b) discrepancies are scheduled with a start date greater than 5 calendar days after the discovery date, or c) discrepancies are awaiting parts with a valid off base requisition. Delayed discrepancies may be Awaiting Maintenance (AWM) or Awaiting Parts (AWP). Although minor maintenance actions must sometimes be deferred or delayed to a more opportune time, maintenance should try to keep this rate as low as possible. If delayed discrepancies can't be scheduled/combined with a more extensive maintenance action, maintenance schedulers should routinely schedule their aircraft down for a day when required to work deferred discrepancies. The DDR metric measures AWM + AWP rates, though individual AWM and AWP rates can and should also be monitored.		
1.22.4.6.1. (Added) Total DDR (%) =	<u>Total (Snapshot) AWM + AWP Discrepancies</u>	
	<u>Average Aircraft Possessed</u>	
1.22.4.6.2. (Added) AWM DDR (%) =	<u>Total (Snapshot) AWM Discrepancies</u>	
	<u>Average Aircraft Possessed</u>	
1.22.4.6.3. (Added) AWP DDR (%) =	<u>Total (Snapshot) AWP Discrepancies</u>	
	<u>Average Aircraft Possessed</u>	
1.22.4.7. (Added) Departure (Logistics) Reliability (DR) Rate (DRR). This is a leading metric used primarily by the MAF to show a composite of supply, airfield saturation or maintenance problems. The on-time standard for departures are those within 15 minutes of the daily scheduled departure time. The metric provides the commander with an objective measure of the health of the air mobility system and reflects the percentage of departures that are on-time. The main focus of the departure reliability metric is to strengthen the air mobility system through accountability for process improvement. This metric may also be subdivided into other		

categories (e.g., worldwide departure or en route).
1.22.4.7.1. (Added)
$\text{DRR (\%)} = \frac{\text{Number of Departures} - \text{Number of Logistics Delays}}{\text{Number of Departures}} \times 100$
1.22.4.8. (Added) Fix Rate (FR). The FR is a leading indicator showing how well the repair process is being managed. It is a percentage of aircraft with a landing status code of 3 (includes system cap codes 3 and 4) returned to a flyable status in a certain amount of time (clock hours). Refer to AFI 21-103 and MAJCOM directives for maintenance start time (e.g., engine shut down, "first" chock). Problems found by maintenance after the aircraft lands (ground found) are not considered in the fix time. The fix time stops when all Landing Status Code 3 Pilot Reported Discrepancies (PRDs) are fixed even if the aircraft remains NMC. This metric is an excellent tool to track "dead time" in aircraft repair processes because it measures the speed of repair and equipment maintainability. The common, standard interval for this metric is 12-hours. However, fighter units typically measure fix rate at shorter intervals (4 and/or 8 hours) along with the 12-hour rate.
1.22.4.8.1. (Added)
$\text{FR (\%)} = \frac{\text{"Code-3" Breaks Fixed Within 12 Hours of Landing}}{\text{Total "Code-3" Breaks}} \times 100$
1.22.4.9. (Added) Hangar Queen (HQ) (Average) Rate. Refer to Chapter 14 of this instruction for HQ categories/criteria. This indicator is used to evaluate management of the Hangar Queen program and to assist units with problems beyond their control. The HQ rate captures the average number of aircraft hangar queen days (all categories) for a specified reporting period.
1.22.4.9.1. (Added)
$\text{HQ (\%)} = \frac{\text{Total Acft Days in all HQ Categories (in report period)}}{\text{Days (in report period)}} \times 100$
1.22.4.10. (Added) Home-Station Logistics Departure Reliability (HSLDR) Rate. This is a leading metric used primarily by the MAF for airlift aircraft. This delineates down to only first-leg departures of unit-owned aircraft departing home station.
1.22.4.10.1. (Added)
$\text{HSLDR Rate (\%)} = \frac{\text{\# of HS Departures} - \text{\# of HS Logistics Delays}}{\text{\# of HS Departures}} \times 100$
1.22.4.11. (Added) Isochronal Inspection (ISO) Rate. This leading metric measures the average time until next major inspection remaining on the fleet. It should be approximately half the inspection interval and should appear as a diagonal line when the fleet ISO average is portrayed graphically in a Time-Distribution Interval (TDI) (e.g., "scatter gram"). An ISO TDI is a product that shows hours remaining until the next phase inspection (PH) on each aircraft possessed by a unit. However, a unit may have good reasons to manage its ISO flow so the data

points define a pattern other than a diagonal line.
1.22.4.11.1. (Added) ISO Rate = $\frac{\text{Total Hours of All Possessed Aircraft Until Next ISO}}{\text{Total Possessed Aircraft Assigned}}$
1.22.4.12. (Added) Mission Capable (MC) Rate. Though this is a lagging indicator, the MC rate is perhaps the best-known yardstick for measuring a unit's performance. It is the percentage of possessed hours (excluding aircraft in "B-Type" possession purpose code/purpose identifier code status: BJ, BK, BL, BN, BO, BQ, BR, BT, BU, BW, BX) for aircraft that are FMC or PMC for specific measurement periods (e.g., monthly or annual). A low MC rate may indicate a unit is experiencing many hard breaks, parts supportability shortfalls or workforce management issues. Maintenance managers should look for workers deferring repairs to other shifts, inexperienced workers, lack of parts from LRS, poor in-shop scheduling, high cannibalization rates or training deficiencies. High commitment rates may also contribute to a lower MC rate. The key is to focus on negative trends and identify systemic, underlying causes. Further, the root factors of the MC rate should be measured, evaluated and reported through the use of the TNMCM, TNMCS and NMCB rates.
1.22.4.12.1. (Added) MC (%) = $\frac{\text{FMC Hours} + \text{PMC Hours}}{\text{Possessed Hours}} \times 100$
1.22.4.12.2. (Added) Total Not Mission Capable Maintenance (TNMCM) Rate. Though a lagging indicator, the TNMCM rate is perhaps the most common and useful metric for determining if maintenance is being performed quickly and accurately. It is the average percentage of possessed aircraft (calculated monthly/annually) that are unable to meet primary assigned missions for maintenance reasons (excluding aircraft in "B-Type" possession identifier code status). Any aircraft that is unable to meet any of its wartime missions is considered Not Mission Capable (NMC). The TNMCM is the amount of time aircraft are in NMCM plus Not Mission Capable Both (NMCB) status. Maintenance managers should look for a relationship between other metrics such as R/R, BR and FR to the TNMCM Rate. A strong correlation could indicate heavy workloads (e.g., people are over tasked), poor management, training problems or poor maintenance practices. The TNMCM is also called "out for maintenance."
1.22.4.12.2.1. (Added) TNMCM (%) = $\frac{\text{NMCM Hrs} + \text{NMCB Hrs}}{\text{Possessed Hours}} \times 100$
1.22.4.12.3. (Added) Total Not Mission Capable Supply (TNMCS) Rate. Though this lagging metric may seem a "LRS responsibility" because it is principally driven by availability of spare parts, it is often directly indicative of maintenance practices. For instance, maintenance can keep the rate lower by consolidating feasible cannibalization actions to as few aircraft as practical. This monthly/annual metric is the average percentage of possessed aircraft that are unable to meet primary missions for supply reasons. The TNMCS rate is the time aircraft are in NMCS plus NMCB status. TNMCS is based on the number of airframes out for mission capable (MICAP) parts that prevent the airframes from performing their mission (NMCS is not the number of parts that are MICAP). Maintenance managers must closely monitor the relationship between the Cannibalization Rate (CR) and TNMCS. TNMCS is also called "out for supply."

1.22.4.12.3.1. (Added) TNMCS (%) = $\frac{\text{NMCS Hrs} + \text{NMCB Hrs}}{\text{Possessed Hours}} \times 100$
Possessed Hours
1.22.4.13. (Added) Primary Aerospace Vehicle Authorized (PAA) vs. Possessed (P/P) Rate. PAA are those aircraft authorized for a unit to perform their operational mission(s). It forms the basis to allocate operating resources to include manpower, support equipment, and flying hour funds. This metric shows a comparison of the unit's PAA versus average possessed aircraft for a particular time period. It identifies units below PAA so AFMC can assist in reallocating resources to support contingency taskings or to reduce flying hour requirements. Reference AFI 16-402, <i>Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination</i> .
1.22.4.13.1. (Added) P/P (%) = $\frac{\text{Average Number of Possessed Aircraft}}{\text{Total Unit Aircraft PAA}} \times 100$
Total Unit Aircraft PAA
1.22.4.14. (Added) Personnel Availability (PA). Personnel availability simply provides a measure of manning status. It compares the number of personnel authorized to the number of personnel available. A maintenance manager may find it useful to review data based on skill level. In which case, compare the personnel authorized to the number of personnel holding a specific skill level. The number authorized is based on the Unit Manning Document. The number available includes only those available for duty, which excludes those who are reassigned, on leave, Temporary Duty (TDY), etc.
1.22.4.14.1. (Added) PA (%) = $\frac{\text{Total Number of Personnel Available}}{\text{Total Number of Personnel Authorized}} \times 100$
Total Number of Personnel Authorized
1.22.4.15. (Added) Phase Flow (PF) Average. This leading metric measures the average phase time remaining on the fleet. It should be approximately half the inspection interval and should appear as a diagonal line when the fleet PF average is portrayed graphically in a TDI. A phase TDI is a product that shows hours remaining until the next phase on each aircraft possessed by a unit. However, a unit may have good reasons to manage its phase flow so the data points define a pattern other than a diagonal line. For example, in preparation for a long-distance overseas deployment, a unit may need to build up the average phase time (average fleet time) remaining on its fleet, because phase capability may be limited for a short time. Beware of gaps or groupings, especially on aircraft with less than half the time remaining to phase.
1.22.4.15.1. (Added) PF = $\frac{\text{Total Hours of All Possessed Aircraft Until Next Phase}}{\text{Total Possessed Aircraft Assigned}}$
Total Possessed Aircraft Assigned
1.22.4.16. (Added) Repair Cycle Processing (RCP) Total Time/Rate. Though primarily considered a "supply-related metric," this indicator can be an excellent local management tool. It is the average time expressed in days that an unserviceable asset spends in the repair cycle at a unit. This indicator is for repairable aircraft parts only; it does not include engines or support equipment. The clock begins when the replacement part is issued to the flightline and ends when

the serviceable asset is returned from the repair facility to the parts store for reissue. To improve the process of repairing parts, the different steps in that process must be measured.

1.22.4.16.1. (Added)

$$\text{RCP (\%)} = \frac{(\text{Pre-Mx} + \text{Repair} + \text{Post-Mx Days}) - \text{AWP Days}}{\text{Number of Items Turned In}} \times 100$$

1.22.4.17. (Added) Repeat/Recurring (R/R) Discrepancy Rate. This metric is a leading indicator and perhaps the most important and accurate measure of the unit's maintenance quality. It is the average number of repeat and recur system malfunctions compared to the total number of aircrew reported discrepancies. A repeat discrepancy is when the same malfunction occurs in a system/subsystem on the next sortie/sortie attempt after the discrepancy originally occurred and was cleared by maintenance (including CNDs/no-defect-noted, etc). A recurring discrepancy is when the same system/subsystem malfunction occurs on the 2nd thru 4th flights/attempted flights after the original flight in which the malfunction occurred and was cleared by maintenance (including CNDs/ no-defect-noted, etc). A high R/R rate may indicate lack of thorough troubleshooting; inordinate pressure to commit aircraft to the flying schedule for subsequent sorties; or a lack of experienced, qualified or trained technicians. The more complex the weapon system and the greater the operations tempo, the more susceptible a unit is for repeat or recurring discrepancies. Examine each R/R discrepancy and seek root causes and fixes. The goal should be to keep all repeat and recurring discrepancies to a minimum.

$$1.22.4.17.1. \text{ (Added) R/R (\%)} = \frac{\text{Total Repeats} + \text{Total Recurs}}{\text{Total Pilot Reported Discrepancies}} \times 100$$

1.22.4.18. (Added) Upgrade Training (UT) Rate. This metric reflects the percentage of technicians in upgrade training. The goal should be to keep the combined total less than 40 percent because the higher the number, the greater the training burden. Training should be given high priority, as the number of personnel in training (and more importantly, the quality of the maintenance training program) invariably affects other aircraft metrics (e.g., R/R or FR) in ways that may not be immediately obvious.

$$1.22.4.18.1. \text{ (Added) UT (\%)} = \frac{\text{Number of Technicians in Upgrade Training}}{\text{Total Number of Technicians}} \times 100$$

1.22.4.19. (Added) Utilization (UTE) Rate. The UTE rate is a leading indicator, but serves as a yardstick for how well the maintenance organization supports the unit's mission. The UTE rate is the average number of sorties or hours flown per Primary Aerospace vehicle Authorized (PAA) per month as found in the HAF/A3O PB documents. This measurement is primarily used by operations in planning the unit's flying hour program. Maintenance uses this measurement to show usage of assigned aircraft. Since UTE rates are used for planning, actual UTE rates (computed at the end of the month) are used to evaluate the unit's monthly accomplishment against the annual plan. Typically, Combat AF (CAF) units measure the sortie UTE rate, while MAF units measure the hourly UTE rate to more accurately measure the combined performance of operations and maintenance.

1.22.4.19.1. (Added) UTE Rate = <u>Sorties (or hours) Flown per Month</u>
PAA per Month
1.23. (Added) Support Agreements (SA). Maintenance organizations may be tasked to support functions not related to the primary unit mission. Intra-service, inter-service, inter-command, and international support agreements outline the degree of support provided and the responsibilities of the supported function. The agreements must be developed and reviewed in terms of possible impact on the primary unit mission and all other existing agreements and fully coordinated with the LRS plans function.
1.23.1. (Added) The support agreement will also identify the manpower required to support the workload as agreed upon by both organizations.
Chapter 2 - SAFETY
2.7.1. (Added) Occupational Safety and Health Administration (OSHA) officials, as representatives of the Secretary of Labor, may conduct inspections of non military-unique workplaces and operations where AF civilian personnel work. (The inspections may be unannounced). OSHA inspectors may question or privately interview any employee, supervisory employee, or official in charge of an operation or workplace.
2.7.2. (Added) Federal OSHA officials may perform OSH inspections of AF workplaces in areas where the US holds exclusive federal jurisdiction (including government owned contractor operated facilities).
2.7.3. (Added) State OSHA officials, operating under a federally approved plan and subject to the terms of any variance, tolerance, or exemption granted by the Department of Labor, may enforce state OSHA standards in contractor workplaces. At overseas location, local government agencies may conduct inspections of AF operations where host nation personnel are employed or contractor facilities or operations as stipulated in the status of forces or country-to-country agreement IAW AFI 91-202.
2.10. AFOSHSTD 91-100 if applicable, equipment TOs, and local publications. See Attachment 1 for AFOSHSTDs and AFIs applicable to all aircraft maintenance activities.
Chapter 3 - GENERAL RESPONSIBILITIES FOR COMMANDERS AND KEY LEADERS
3.1. General. All NSOs will develop a local guidance that outlines how their organization shall address all logistics responsibilities for each level of organization to meet the intent of AFI 21-101 Chapter 3 . Guidance will ensure all responsibilities associated with the positions identified in Chapter 3 of AFI 21-101 and this supplement is satisfied. Level of responsibility does not have to correlate directly, but the level must be sufficiently high in the organization to ensure compliance of logistics programs and processes. Ensure sound and effective logistics practices and safety programs are implemented within their organizations. Require strict adherence to

technical data and management procedures. Include any AF directed logistics process performed by a contractor on a military installation within those contracts.
3.4. Maintenance Group Commander Responsibilities. MXG/CC/CL/CDs or appropriate level may delegate management of these duties to their deputies.
3.4.1.43. The link for the Propulsion Center of Excellence is https://cs.eis.afmc.af.mil/sites/Propulsion/PCOE/default.aspx .
3.4.1.72. (Added) Approve annual workload allocation plans as applicable for all repair nodes within the MXG.
3.7.21. (Added) Monitor new requirements for training, equipment authorizations, special tools, E-Tools, workspace, facilities, and manning for impact on unit's capability to perform its mission.
3.7.22. (Added) When the squadron is part of a Repair Network, will assign by letter any node manager(s) responsible to a specific repair network.
3.8.4. Ensure the engineering data service center (EDSC) is used to obtain information/specifications when technical orders (TO) do not provide enough detail.
3.9.42. (Added) Utilize AF Form 1067 and submit through proper channels for all equipment modifications regardless if they are temporary or permanent. Units possessing equipment that has been previously modified will request modification approval from the item engineering authority and document modifications in the equipment historical records IAW TO 00-20-1. All units shall submit a deficiency report IAW TO 00-35D-54 on all equipment received from the manufacturer, PEM or supply system that are not in the original configuration as outlined in the end-item TO. In special circumstance field units may perform temporary work prior to receiving AF Form 1067 approval only to determine if a modification is feasible with coordination from the applicable item engineer, supervision, and quality assurance office.
3.9.43. (Added) When the flight is part a Repair Network, ensure that the node manager(s) communicate to their respective repair network manager(s) changes in capability and capacity and any deviations in production.
Chapter 4 - AIRCRAFT/HELICOPTER MAINTENANCE SQUADRONS (AMXS/HMXS)
This section intentionally left blank. No supplemental data necessary.
Chapter 5 - MAINTENANCE SQUADRON (MXS)
This section intentionally left blank. No supplemental data necessary.
Chapter 6 - MAINTENANCE OPERATIONS SQUADRON

This section intentionally left blank. No supplemental data necessary.
Chapter 7 - MAINTENANCE PLANS, SCHEDULING AND DOCUMENTATION (PS&D)
This section intentionally left blank. No supplemental data necessary.
Chapter 8 - QUALITY ASSURANCE (QA)
8.1. General. For the purpose of this chapter the NSOs are: ASC, AFNWC and any additional units identified in Table 8.1 . Where applicable, ESC & AEDC shall follow Chapter 18, Contract Surveillance .
8.2. Responsibilities. Civil service and contracted organizations will follow the accepted quality program outlined in their respective contract. NSOs will develop a publication to institute a QA program within their areas of responsibility and coordinate through HQ AFMC/A4US to ensure applicability and intent have been addressed. QA must report directly to the MXG-equivalent or higher function. NSO's will follow the requirements outlined in this chapter (AFI 21-101, Chapter 8 , Section 8A, All Units) and Section 8C, Table 8.1., Applicability Matrix to address the various paragraphs within this chapter as applicable.
8.2.1.7. (Added) Manage Self-Inspection Program.
8.3.9.1. (Added) Review all locally designed and manufactured tool records for currency and accuracy every 2 years.
8.3.11. List shall be approved by the MXW/CC/CL/CD or equivalent and reviewed at least quarterly for applicability. Where a MXW does not exist because of command structure, the MXG/CC/CL/CD or equivalent will approve the list.
8.3.22. (Added) Monitor oil analysis program (OAP) IAW AFI 21-124, Oil Analysis Program.
8.3.23. (Added) Serves as the OPR for writing the local guidance to AFI 21-101 in accordance with AFI 33-360.
8.3.24. (Added) Ensures appropriate documentation is initiated for aircraft and equipment impoundments.
8.3.25. (Added) Ensure QA personnel conduct Personnel Evaluations (PE) on any personnel who perform, supervise, inspect, evaluate, instruct, or train a logistics/maintenance task every 24-months. Personnel must pass PE on task that are core competency of their job and/or task identified requiring special skills qualification (i.e. SCR or SSQ). For new personnel or personnel performing new task conduct a PE as soon as possible but no longer than 120 days from task qualification. Failed evaluations will result in a re-evaluation within 30 days.

8.3.26. (Added) QA Chief will develop a Quality Assurance Community of Practice (CoP) and provide HQ AFMC/A4US full access. As a minimum the following items will be posted:
8.3.26.1. (Added) MXG IPI listing.
8.3.26.1.1. (Added) CPSD will develop local guidance to establish IPI procedures.
8.3.26.2. (Added) Key Task Listing.
8.3.26.3. (Added) Routine Inspection Listing Checklists.
8.3.26.4. (Added) MSEP and meeting minutes.
8.3.26.5. (Added) MSEP Evaluation & Inspection Plan including Surveillance Schedule.
8.3.26.6. (Added) Monthly Summary and Metrics.
8.3.26.6.1. (Added) For Cryptologic Systems Division (CPSD) the requirement is quarterly Summary and Metrics.
8.3.26.7. (Added) Checklist applicability Matrix.
8.3.26.8. (Added) Quality Review Board Analysis.
8.3.26.9. (Added) Local Operating Instructions.
8.3.26.10. (Added) Cross-tell information/QA Flash
8.3.26.11. (Added) Organizational Charts to include complete break out of all organizations beginning with 2ltr. Organizational charts should show a breakdown to at least the (5) five letter. Include office symbol/title, name/title, and phone/building number.
8.3.26.12. (Added) Check AFMC LCAP CoP for templates and additional requirements. Deliverables must meet prescribed format when templates are provided on the AFMC LCAP CoP.
8.3.27. (Added) Determine the duties and responsibilities of inspectors.
8.3.27.1. (Added) Dedicated Inspector System. In an effort to enhance continuity and communication between QA and the squadrons, utilize the dedicated inspector system to the maximum extent possible. Inspectors from QA are aligned with individual squadrons and maintenance functions. Dedicated inspectors may continue to perform other QA duties; however, their inspection activities focus on their assigned squadron/group. Although the Dedicated Inspector System will be used, QA Chief will ensure rotation of these personnel IAW

paragraph 8.8 and 8.8.1 of this instruction and supplement.
8.3.27.2. (Added) QA Chief will ensure inspectors evaluate the maintenance and logistics processes to ensure the right tools, equipment, technical orders, parts, requirements, etc. are on hand and properly integrated into the overall maintenance and logistic processes.
8.3.28. (Added) As the selecting/hiring official for QA inspector/COR, QA Chief will ensure the pre-requisites to fill QA inspector/COR is the individual must be highly qualified subject matter expert (SME) in the functional area (i.e., avionics, AGE, aircraft maintenance, fabrication, munitions, etc) for the functional area position the individual will be evaluating. The QA Chief must ensure civilian QA inspector/COR civilians have the prior maintenance experience in the functional area for which the position will be filled.
8.4.12.1. (Added) Review MSEP data monthly to identify high-missed items from evaluations, inspections and observations.
8.4.13. (Added) Annually document the evaluation of the quality of maintenance training IAW all applicable directives and TOs.
8.5.1.1. (Added) QA Inspectors/COR will conduct and document evaluations (PE, EPE), inspections, and process reviews to include as a minimum the requirements in the MSEP.
8.5.1.2. (Added) Only munitions qualified inspectors with a 2W0 AFSC will inspect 2W0 maintenance tasks.
8.6. Quality Assurance Training. All CORs, inspectors and evaluators (i.e., QA personnel) must be trained to the extent necessary to perform QA functions to include possessing sufficient technical knowledge to effectively perform their duties.
8.6.1.1. (Added) Training must cover specific technical and weapons systems training requirements.
8.6.1.2. (Added) Training must cover the evaluation and inspections of fundamental maintenance and logistics programs such as: tools and equipment, technical orders, material management, TMDE, forms documentation, FOD/DOP, safety and other programs found in the Routine Inspection Listing.
8.6.1.3. (Added) Training must cover the evaluation and inspections of functional area(s) (i.e. Avionics, AGE, PMEL, Munitions, etc.).
8.6.2. 1. QA inspectors (permanent and augmentee) require an annual EPE on a personnel evaluation (PE) or a quality verification inspection (QVI).
8.6.5. Ensure requirements of TO 00-25-172, <i>Ground Servicing of Aircraft and Static Grounding/Bonding</i> and AFOSHSTD 91-5, <i>Welding, Cutting and Brazing</i> , are met before

inspecting or evaluating aircraft welding operations.
8.6.10. (Added) Training Documentation. All QA personnel must be trained or possess sufficient technical knowledge to effectively perform their duties. Employee training will be tracked in the Educational and Training Management System (ETMS) or any other HQ AFMC/A4 approved system. QA personnel are required to meet minimum qualifications on certified task being assessed, and must meet any qualification (mandatory formal training) requirements. The Maintenance Quality Manual or QAP will identify specific technical and/or weapons systems training requirements.
8.8.1. (Added) Group QA Chief will analyze Quality Data and take measures to prevent complacency and to ensure a “fresh look” at maintenance processes and maintenance discipline in all areas and shifts of operations.
8.9. Activity Inspection Program. AFMC units with assigned Quality Assurance will establish an activity inspection program. The MXW/MXG/CC/CL must ensure the depth and detail of the activity inspection is sufficient to evaluate the management capability of the maintenance organization. This can be achieved by expanding the minimum requirements outlined herein or by adding special subject items. When conducting Activity Inspections, the team should use (but are not limited to) the appropriate AF and MAJCOM LCAP and IG inspection checklists and process improvement tools as the basis to evaluate and provide actionable feedback for unit leadership. The team should evaluate the maintenance and logistics processes to ensure the right tools, equipment, technical orders, parts, requirements, etc. are on hand and properly integrated into the overall maintenance and logistic processes. Additionally, the activity inspection team should address internal problems of the unit and those caused by other activities outside the jurisdiction of the inspected unit. The MXW/MXG QA Chief recommends adjustments to the requirements based on trends and problem areas identified by QA personnel, MAJCOM and AF IG, LCAP inspections, or audit reports. In addition to utilizing QA inspectors, subject matter experts, cross utilizing flight or section chiefs etc. can be used to conduct the Activity Inspections. The reviews are planned, coordinated, and executed by the QA Focal Point. Activity inspection intervals will not exceed 12 months. CPSD will use Special Inspections to evaluate maintenance and logistics procedures.
8.9.2. The MXW/MXG/CC/CL will determine the scope of the units inspection.
8.9.2.1. (Added) The activity inspection should encompass a statistical sampling of all sections/flights of the organization being inspected and unit self inspection programs within each inspected section/flight. Whenever possible, locally required inspections conducted by outside agencies (e.g., wing safety, training, security, LRS, BE, or the fire department) should be accomplished in conjunction with the QA activity inspection. This reduces the number of disruptions to the organization being inspected and also increases the comprehensiveness of the activity inspection. However, if outside agencies accomplish a separate inspection within the activity inspection year, these can also be counted as part of the annual activity inspection.
8.9.3.1. (Added) Activity Inspection Reports. Inspectors should work with the inspected organization to assist in performing root cause analysis and developing corrective action plans

for Wing wide systemic issues.
8.9.4. (Added) Follow-up Inspections. Depending upon the severity of discrepancies and the overall rating, the MXW/MXG/CC/CL will direct specific follow-up inspections. Follow-up inspections must not cause other inspections to be delayed.
8.10. Maintenance Standardization and Evaluation Program (MSEP). As AFMC OPR, HQ AFMC/A4US will implement, manage and execute the command's LCAP and QA programs.
8.10.4.1. (Added) QA will develop and track inspection reports until closed and compile a report highlighting all findings, problem areas and any recommended improvements as a minimum and provide to MXW/MXG/CC or equivalent leadership.
8.10.8. In addition to Material Management, Foreign Object, and Tool Control, Equipment Management and the following areas must be addressed:
8.10.8.7. Include the following tasks on the KTL, if applicable:
8.10.8.7.1. (Added) Major aircraft maintenance inspections (phase, periodic, transfer, acceptance, and isochronal).
8.10.8.7.2. (Added) Engine final inspection (jet engine intermediate maintenance [JEIM]).
8.10.8.7.3. (Added) Engine, after installation to aircraft.
8.10.8.7.4. (Added) Engine controls (throttle) at time of installation.
8.10.8.7.5. (Added) Anytime maintenance is performed on the variable stator vane system on GE F110-100/-129 engines (JEIM).
8.10.8.7.6. (Added) Final aircraft gun system installation prior to panel installation.
8.10.8.7.7. (Added) Final gun system inspection (in-shop).
8.10.8.7.8. (Added) Engine blade blends (All engine types).
8.10.8.7.9. (Added) Engine bay inspection.
8.10.8.7.10. (Added) A-10 white area.
8.10.8.7.11. (Added) In coordination with HQ AFMC/A4US and HQ AFMC/A4M, local QA Superintendent may add additional tasks to the KTL. QA will not remove any mandatory tasks as listed above unless properly coordinated with HQ AFMC/A4US. QA will consolidate wing inputs for the MAJCOM KTL and it will be approved by the MXW/CC/CL/CD in writing. Standardized AQLs will be developed by QA for all tasks on the MAJCOM KTL. QA will

review the list at least quarterly to ensure it encompasses those maintenance actions/ functions that directly affect maintenance quality. Each affected organization will be provided a copy of the list by QA. QA will ensure units maintain this list and ensure its accuracy and compliance.
8.10.8.7.12. (Added) As a minimum in B-52 units, 2W1X1 inspector(s) will inspect 50 percent of all weapons system (Aircraft armament) carded items following each aircraft periodic inspection.
8.10.8.8. AFMC RIL inspection frequency. Each applicable RIL will be evaluated per applicable units, functions, and MDS and will be included in the quarterly Evaluation and Inspection Plan. In addition to applicable technical orders, directives, instructions, MAJCOM RIL checklists with local unit publications will be used to conduct RIL inspections. RIL inspections may be documented as QVIs/PEs.
8.10.8.8.23. (Added) Flight control rigging procedures and primary flight control rigging tasks as designated in aircraft MDS specific technical data.
8.10.8.8.24. (Added) TCTO accomplishment.
8.10.8.8.25. (Added) Oil Analysis Program (to include sampling procedures, documentation, etc).
8.10.8.8.26. (Added) Uninstalled engine test cell operations.
8.10.8.8.27. (Added) Aircraft Fuel System Repair Operations (prior to tank closure, etc).
8.10.8.8.28. (Added) Aircraft pressurization/depressurization.
8.10.8.8.29. (Added) Aircraft jacking operations.
8.10.8.8.30. (Added) Aircraft engine run operations.
8.10.8.8.31. (Added) Material Management (formerly Material Control/ Parts Management.
8.10.8.8.32. (Added) Foreign Object.
8.10.8.8.33. (Added) Equipment Management.
8.10.8.8.34. (Added) Safety (Industrial & Flightline).
8.10.8.8.35. (Added) Training.
8.10.8.8.36. (Added) Engine Management.
8.10.8.8.37. (Added) Dropped Object.

8.10.8.9. AFMC Conventional Munitions Program. To ensure quality assurance of AFMC munitions activities, the unique organizational alignment and mission of AFMC units must be addressed. AFMC munitions activities will follow their group QA program (if established) or develop an instruction to institute a QA program within their areas of responsibility and coordinate through HQ AFMC/A4U and A4MW to ensure applicability and intent has been addressed. In non-group established QA programs, QA must report directly to the squadron CC/CL or higher function. The activity will use applicable paragraph in 8.10.8.9.1 thru 8.10.8.9.8. In addition, use Table 8.1 to ensure munitions, maintenance, and equipment quality and reliability.

8.10.8.9.9. **(Added)** The following munitions activities will perform all 19 QA items listed in paragraph 8.10.8.9. and Table 8.1: The 377 MXS (Kirtland). NOTE: Item 9 may not apply to units that do not have missiles or trailers.

8.10.8.9.10. **(Added)** The following munitions activities will add QA items 10-17 listed in Table 8.1. to their semi-annual Self-Inspection checklist: 66 MSG (Hanscom), 576 AMRS (AMARG), 704 MSG (Arnold), AFRL (Eglin & Edwards), 46 Test Group (Holloman), 582 MMS (309 MMG, Hill) and 88 OSS (Wright Patterson). NOTE: 72 LRS (Tinker) see Chapter 18, QAE, to ensure QA items 10-17 are evaluated.

Table 8.1 (Added) AFMC Conventional Munitions QA Program

Maintenance Quality General Section
1. QA Responsibilities (CC may differ from MXW; LRS, OSS, etc.)
2. Quality Assurance Inspector Responsibilities
3. Quality Assurance Training
4. Maintenance Standardization and Evaluation Program (MSEP)
5. Establish/re-validate Acceptable Quality Levels (AQL/Standards)
6. QA Data Based (approved by MAJCOM A4US)
7. Monthly MSEP Summary
8. Quarterly MSEP Meeting
9. One Time Inspections (OTI)
Munitions Quality Specific Areas
10. Accountability
11. Storage practices, security, and safety
12. Inspection
13. Materiel handling and test equipment
14. Stockpile management
15. Training programs
16. Infrastructure (LPS, grounds, and bonds)
17. TAS, CTKs, tools, and support equipment

18. Munitions assembly
19. Tactical Munitions Reporting System (TMRS)
8.10.9. Unit MSEP Evaluation and Inspection Plan (E&I Plan). QA OIC/SUPT (MXG QA Chief) will develop an E&I Plan containing areas, types and numbers of inspections and evaluations that must be conducted. for their respective MXG/SQ and will be coordinated through the appropriate MXG/SQ/CC/CL (if applicable, SQ MOO/Supt). QA will update/revise, publish and distribute a MXG/CC/CL/CD approved quarterly plan. The E&I Plan will be developed using the criteria listed below:
8.10.9.1.1. (Added) Consider historical PEs, QVIs, and other inspections data (especially any items having a pass rate of less than 80 percent); not mission capable (NMC) causes; aborts and trends; in-flight emergencies (IFE) and trends; high component or system failure rates; repeat/recurring/CND discrepancies trends; Deficiency Report (DR)/ Service Report (SR) trends; suspected training deficiencies; technical data violations (TDVs), detected safety violations (DSVs), and tasks outlined in aircraft -6 TOs.
8.10.9.4. (Added- AFMC) In addition to paragraphs 8.10.9.1. thru 8.10.9.3., the Evaluation and Inspection Plan will be developed using the criteria listed in paragraphs 8.10.9.4.1. thru 8.10.9.4.22.:
8.10.9.4.1. (Added) E& I Plan will be organized in sections communicating specific types of quality processes/procedures required (Identifies specific detailed quality processes and procedures relative to a particular group/squadron), defines specific roles and responsibilities per wing/group/SQ (what shall be accomplished, by whom, when, how, and what documents are used and how they are controlled), and how those quality processes are implemented: Requirements, Processes to include Documentation Process, Evaluations, Inspections, and QA Surveillance Plan/Schedule (QASP).
8.10.9.4.2. (Added) QA Chief will review the E&I Plan for compliance to this instruction, at least quarterly or when major changes, updates, or revisions are made. This plan meets the requirements of AFMCI 63-501, AFMC Quality Assurance, for production maintenance CORs.
8.10.9.4.3. (Added) Identify the assessment type (i.e., task, specific item, procedure or process) and minimum number (determined by the documented methodology (e.g. ANSI- Z1.4 2003) or rationale used in the program administration section of the E&I Plan) of Personnel Evaluations (PE), Quality Verification Inspections (QVI), and Routine Inspection List (RIL) and assessment areas to be conducted monthly
8.10.9.4.4. (Added) Identify by name of Personnel Evaluations (PE), Evaluator Proficiency Evaluations (EPE) evaluations due during the month the E&I plan is published and conduct these Evaluations on core/special skills qualified tasks. Any Evaluations not conducted during the month scheduled will be carried forward to the next month and can only be carried forward one month total. Requires Group/SQ CC approval. Additionally, an explanation/justification for not completing the evaluation is required and will be included in the monthly summary and monthly briefing.

8.10.9.4.5. (Added) Assessment Areas. For the purpose of planning and conducting assessments, major workloads will be broken down into assessment areas and documented in the E&I Plan (Program Administration and Surveillance Schedule) (As applicable). Assessment areas are defined as segments or portions of a workload, system, component, process, procedure, or subject matter that is investigated, inspected, evaluated or audited.
8.10.9.4.6. (Added) Methods for inspecting, evaluating, and rating technician proficiency, equipment condition etc.
8.10.9.4.7. (Added) Key Task Listing (KTL).
8.10.9.4.8. (Added) Routine Inspection List (RIL) requirements.
8.10.9.4.9. (Added) Identify type and frequency of reports required by Wing QA office.
8.10.9.4.10. (Added) Define the process for control, routing and follow-up of the AFMC Form 77, Request for Quality Assistance or local equivalent.
8.10.9.4.11. (Added) Define the corrective action and preventive action process to be accomplished by production units. Care should be taken to determine root causes of deficiencies rather than simply treating symptoms. The process will, as a minimum:
8.10.9.4.11.1. (Added) Include analysis of the defects and actions taken.
8.10.9.4.11.2. (Added) Include methods used by QA offices to communicate and cross-feed information to other groups and wings.
8.10.9.4.11.3. (Added) Include methods used for QA to follow-up on corrective action taken by unit, preventive action, or process changes made to prevent recurrence or new occurrences of similar non-conformances.
8.10.9.4.12. (Added) Establish standards for Discrepancies/Quality Assessment Results (QAR) ratings.
8.10.9.4.13. (Added) Define local process for documenting deficiencies, corrective/ preventive action, and follow-up data into MIS.
8.10.9.4.14. (Added) Define requirements to analyze quality deficiency and acceptance inspection reports and recommend appropriate corrective and preventive action to production divisions.
8.10.9.4.15. (Added) Data collected, type of analysis done, reports to be accomplished and review level as a minimum

8.10.9.4.16. (Added) Develop a QA Surveillance Schedule/Plan (QASP) by unit and evaluators.
8.10.9.4.17. (Added) Procedures to determine Acceptable Quality Levels (AQL).
8.10.9.4.18. (Added) Acceptable Quality Levels (AQL)/Standards. A standard is the acceptable quality level (number of minor defects) that can be considered satisfactory as a process average or conforming to established criteria.
8.10.9.4.18.1. (Added) An AQL/standard denotes the maximum allowable number of minor findings for any assessment. It must be strict enough that the task, process, or product meets an acceptable level of quality, but is not so strict that a CAT I / QAR-1 rating is unattainable. The AQL/standard is derived from QA performance-based data. MXW/MXG QA will develop procedures for determining minimum AQL/standard levels delineating an “attainable” quality level. These levels will comprise the AQL standards for all assessment types.
8.10.9.4.18.2. (Added) Failure to meet an AQL/standard results in the assessment being rated as a CAT I/CAT II MAJOR failure. An identified major finding would also result in an assessment being rated as a failure.
8.10.9.4.19. (Added) The unit MSEP Evaluation and Inspection Plan implemented at the MXG level with sections dedicated for each squadron.
8.10.9.4.20. (Added) The Evaluation and Inspection Plan will be developed and reviewed monthly and updated quarterly.
8.10.10.2.1. (Added) The QA Evaluation and Inspection Plan will define “readily detectable” for CAT II discrepancies.
8.10.11.2. CAT II minors shall be documented for trends, and will be counted against the AQL.
8.10.13.3.1. (Added) UCR. An unsatisfactory condition is defined as an event/discrepancy that requires immediate supervisory intervention to ensure safety or process/product fit, form, or function reliability. Unsatisfactory conditions are deemed major and will be documented as a UCR. A condition of a minor nature shall be documented against the applicable checklist or its regulatory guidance.
8.10.14. Personnel Evaluations (PE). A PE is a direct evaluation on any personnel or team who perform, supervise, inspect, evaluate, instruct, or train a logistics/maintenance task. QA will provide notice not less than one hour prior to the evaluation. QA will determine what task will be evaluated. The PE will be on work in-progress or work about to begin. Use PEs to evaluate job proficiency, degree of training, and compliance with technical data. PEs will be used to evaluate newly certified personnel/teams, process changes to include the new processes and procedures and equipment changes. Individuals performing or certifying maintenance tasks are subject to a PE. Rate PEs “pass” or “fail” based on established AQLs/standards. Document the PE on AF Form 2419, <i>Routing and Review of Quality Control Report</i> , MIS, or in the MAJCOM-approved database. Ensure personnel performing maintenance on aircraft/equipment pass a

Personnel Evaluation (PE) every 24-months. Failed evaluations will result in a re-evaluation within 30 days.
8.10.14.1. The PE will include an evaluation of the individual's training records, tool box/tool kit, TMDE and TO. General maintenance practices that relate directly to the task being performed (e.g., safety, material handling, use of tools and equipment, Foreign Object Damage prevention, Electrostatic Discharge prevention, and workmanship) will be examined during the PE. Other maintenance practices may also be examined as locally determined.
8.10.14.1.2.1. (Added) The team task is rated as an overall "pass" or "fail". Team evaluations will be scored the same as PEs. During team evaluations, errors committed by team member(s) and not detected by team chief may also be attributed to the team chief.
8.10.14.2. Individuals or team members will be decertified (on the evaluated task) by their supervisor for a failed PE rating in accordance with applicable training regulations. Determine ratings as follows:
8.10.18. Acceptable Quality Levels (AQL/Standards). When establishing the AQL consider at least six months of data on evaluations performed, and other pertinent data. Consider combining items of equipment within a general equipment type having nearly identical standards. QA has the option to create an AQL formula for inspecting only a portion of a task once a baseline standard for a large task is established (e.g. aircraft phase/ISO inspection has an AQL of 6, if QA inspects 50% of the task, the AQL would be 3).
8.10.20. The MXW/GP/unit must conduct quarterly meetings to review the visual information, graphs, narratives, quality trends identified through inspections and evaluations, discussion of common problem areas and descriptions of successful programs or initiatives in the monthly summary per paragraph 8.10.19 above. Meeting minutes to include slide presentation with corrective actions plans and will be posted on the Quality Assurance Community of Practice (CoP).
8.10.20.1. (Added) For CPSD the information contained in the MSEP Summary, distributed quarterly, satisfies requirements for sections chiefs responsible for maintenance.
8.11. Lead Command-approved QA database. If unit developed databases that include the minimum data field requirements listed in paragraph 8.11.1. thru 8.11.14., then the unit will forward a copy to HQ AFMC/A4US for review and approval.
8.12.2.4. At the heart of the R&M effort are many improvement programs such as PIP, IDEA, productivity, reliability, availability, maintainability (PRAM) program, and PIWGs. The PIM is an integral part of the information gathering and education process of PIWGs. This is accomplished by emphasizing and promoting the PIP through to maintenance technicians and supervisors during visits to work centers. To enhance R&M, the PIM will:
8.12.2.4.8. (Added) Report unit factors contributing to a deficiency to the appropriate local

agency or supervisor for resolution.
8.12.2.4.9. (Added) Identify potential PIWG items by the letter P on the DR logs.
8.12.2.4.10. (Added) Attend PIWGs, or provide adequate background on PIWG issues to AFMC functional managers to allow for quality representation.
8.12.2.4.11. (Added) Evaluate the overall unit configuration management program by reviewing technical, managerial, and documentation aspects of the program and reporting any deficiencies to appropriate local manager or as directed in TO 00-5-15, Air Force Time Compliance Technical Order Process, and AFMC instructions. Immediate action, urgent action, and safety TCTOs require particular attention and emphasis.
8.12.2.4.12. (Added) Monitor and document initial compliance on TCTOs and determine depth and frequency of inspection coverage. Coverage is directly related to the complexity of the TCTO as well as to how critical the system or the component is to be modified.
8.12.2.4.13. (Added) Support verification, validation and TCTO kit proofing, OTIs and command-directed modifications.
8.12.2.4.14. (Added) Along with the TCTO monitor, attend all TCTO planning and reconciliation meetings.
8.12.2.4.15. (Added) Ensure all test aircraft that do not meet TCTO applicability criteria due to installed modifications are identified and tracked in a comprehensive database system. This non-applicability list will reference the waiver of compliance signed by the MXG/CC.
8.12.2.4.16. (Added) Coordinate with the MOF PS&D and the combined flight test (CFT) modification manager (when necessary), the PIM will ensure all aircraft that are de-modified have a conformity check (de-mod reconciliation) complied with to ensure aircraft TCTOs are reinstated (as applicable).
<p>8.13. Configuration Management (CM) and Modification Management. Configuration management includes formulating and submitting modification proposals, and tracking unit concerns being worked by depots and/or contractors. A modification proposal is a recommendation to change the operation, use, or appearance of Air Force equipment (also known as form, fit, and function). A requirement IAW AFI 10-601 is necessary to start the process to modify Air Force Equipment modifications, and a completed AF Form 1067, Modification Proposal can act as a requirement. If a requirement does not already exist, submit proposed modifications on an AF Form 1067. After approval by the appropriate Configuration Review Board (CRB), mail or fax the proposal to the HQ AFMC/A4M functional area manager for information purposes and to the equipment Single Manager (SM) for Configuration Control Board (CCB) approval and review. In no case modify any Air Force equipment without a TCTO or CCB directive. Specific modification configuration control authority unique to AFMC test centers will be defined in the base supplement to AFI 21-101.</p>

8.13.2.1. (Added) Command-directed temporary (T-1 and T-2) modifications are similar to TCTOs; however, they are temporary, and there is no corresponding change to approved weapon system technical data. The approved modification instruction is the authority for both modification and maintenance as long as the modification is installed. To maintain configuration control, command-directed modifications are documented in the same manner as TCTOs. QA must maintain a copy of the command T-1 and T-2 modification instructions on file until they are formally rescinded. Follow additional AFMC guidance in AFMCI 21-126, <i>Temporary 2 (T2) Modification of Aerospace Vehicles</i> .
8.14.1.3.1. (Added) Send two copies to base supply materiel storage and distribution flight inspection section with a cover letter requesting the number of TCTO affected items in supply. Base supply endorses the cover letter, returns it to the PIM and provides a copy to MOF. The PIM will provide copies of each TCTO received to the MOF/PS&D function. Send a copy of MSE TCTOs to munitions flight. The PIM develops the suspense for each cover letter.
8.14.1.3.2. (Added) Send a copy of TCTOs for munitions or missiles to the munitions flight and munitions operations upon receipt. If parts are required from base supply or components stocked by base supply are affected, send one copy to base supply and one copy to materiel control, maintenance supply liaison (MSL), or aircraft support flight section. Do not furnish the 11N series TCTOs to base supply, materiel control, or MSL.
8.14.1.5.1. (Added) Monitor the TODA and its subfunctions including the central TO file, LCL, LWC, and local job guide (LJG) program, computer program identification numbering (CPIN), pack-up data IAW TO 00-5-1, <i>automated TO management system</i> , and timely notification of priority technical data to the appropriate group or squadron supervisors.
8.15. One-Time Inspections (OTI) program. OTIs may be equipment condition or procedural compliance oriented. OTIs may be continued over a period of time until problems are resolved. QA or the OWC will perform OTIs.
DEV 8.16.3.5. Not applicable.
DEV 8.17. Inflight Operational Checks does not apply to NSO.
DEV 8.18. High Speed Taxi Checks does not apply to NSO.
DEV 8.19. Weight and Balance (W&B) Program does not apply to NSO.
DEV 8.20. Chafing Awareness Program does not apply to NSO.
Section 8C (Added) Table 8.1. NSO Applicability Matrix

Chapter 8, NSO Applicability Matrix

Section	ASC	NWC	ESC Chapter 18 Applies	AEDC Chapter 18 applies	CPSD	46th TG
8.2 QA Responsibilities	YES	YES	NO	NO	YES*	YES*
8.3. QA OIC/Superintendent (QAOIC/SUPT) Responsibilities	YES	YES	NO	NO	YES*	YES*
8.4. Quality Assurance Chief Inspector Responsibilities	YES	YES	NO	NO	YES*	YES*
8.5. Quality Assurance Inspector Responsibilities	YES	YES	NO	NO	YES	YES*
8.6. Quality Assurance Training	YES	YES	NO	NO	YES*	YES
8.7. Quality Assurance Augmentation	NO	YES	NO	NO	NO	YES*
8.8. Rotation of Quality Assurance Personnel	NO	YES	NO	NO	NO	NO
8.9. Activity Inspection Program	YES	YES	NO	NO	NO	YES*
8.10. Maintenance Standardization and Evaluation Program (MSEP)	YES	YES	NO	NO	YES*	YES*
8.10.18. Establishing Acceptable Quality Levels (AQL/Standards)	YES	YES	NO	NO	YES	YES
8.10.19. Monthly Summary (Quarterly for ANG & CPSD)	YES	YES	NO	NO	YES	YES
8.10.20. MSEP Meeting	YES	YES	NO	NO	YES	YES
8.11. MAJCOM-approved QA database	YES	YES	NO	NO	YES	YES
8.12. QA Product Improvement Programs	YES	YES	NO	NO	YES*	YES*
8.13. Configuration Management (CM) and Modification	NO	YES	NO	NO	NO	YES*
8.14. Technical Order Distribution Office (TODO)	YES	YES	NO	NO	NO	YES*
8.15. One-Time Inspections (OTI)	YES	YES	NO	NO	NO	YES*
8.16. Functional Check Flights (FCFs)	NO	NO	NO	NO	NO	YES*
8.17. Inflight Operational Checks	NO	NO	NO	NO	NO	NO
8.18. High Speed Taxi Checks	NO	NO	NO	NO	NO	NO
8.19. Weight and Balance (W&B) Program	NO	NO	NO	NO	NO	NO
8.20. Chafing Program	NO	NO	NO	NO	NO	NO
8.21. Quality Assurance Evaluator (QAE)/Quality Assurance Representative (QAR)	YES	YES	NO	NO	NO	YES*

Items designated with "NO" are not applicable.

Items designated with "YES" indicate a mandatory MAJCOM requirement.

Items designated with "YES *" indicate that applicability to all sub paragraphs will be addressed in individual operating instructions and coordinated through HQ AFMC/A4Q to ensure applicability and intent has been addressed.

Chapter 9 - IMPOUNDMENT PROCEDURES
9.1. Aircraft and Equipment Impoundment. NSO's will develop their impoundment program with terminology equivalent to positions/offices used in Chapter 9.
Chapter 10 - TOOL AND EQUIPMENT MANAGEMENT
10.2.1. Units shall standardize tool/equipment procedure.
10.2.1.3. Warranty/Quality Tool Program. The purpose of the warranty/quality tool program is to ensure high quality; industrial-strength warranted tools are available for use in aircraft and equipment activities. Warranty tools will be purchased using the Government Purchase Card (GPC) or through local contracts with a warranty tool vendor. Units desiring to establish a warranty tool program must coordinate their program through both the supply and contracting squadrons. Detailed management procedures are contained in AFMAN 23-110. The following general guidelines apply:
10.2.1.3.1. (Added) Specify desired replacement tool requirements, such as:
10.2.1.3.1.1. (Added) Replacement tool delivery time.
10.2.1.3.1.2. (Added) Etching of replacement tools.
10.2.1.3.1.3. (Added) Office responsible for maintaining replacement tools (if applicable) and number of tools stocked.
10.2.1.3.1.4. (Added) Direct contact with vendor to replace tools.
10.2.1.3.1.5. (Added) When preparing background information for base contracting, provide as much information as possible on desired strength, finish (chrome or industrial), insulation, physical dimensions, magnetic properties, laser etching, and size of letters.
10.2.1.3.1.6. (Added) The contract should include procedures for replacement of lost tools and lost tool procedures. Procedures shall be accomplished IAW this instruction and unit publications.
10.2.1.5. Include equipment/equipment kits (e.g. borescope, rig pin kits, testers).
10.2.1.8. MXG/CC or appropriate level will determine marking requirements. At a minimum, these markings will identify the individual.
DEV 10.2.1.9. Procedures to ensure positive control of rags in FOD critical areas. NSO's will assess all work centers to identify FOD critical areas. Any work center where a misplaced or dropped tool or item could reasonably be expected to cause serious damage to

personnel/equipment or adversely affect research and development (R&D) mission accomplishment will be designated FOD critical. The following areas are, by their nature, FOD-critical areas: Work on or near the flightline, work on or near aircraft/engines and work on equipment designated to be installed on an aerospace vehicle.
10.2.1.9.1. If paper product is used, control procedures for their use will be identified in local instructions.
DEV 10.2.1.15. Procedures need developed for critical and non-critical FOD potential areas. In FOD critical areas the same individual that signs out a CTK cannot sign it back in. In non-critical FOD potential areas the same person can sign TK/CTKs in and out. Clarify in local procedures how to ensure oversight of this process. Any work center where a misplaced or dropped tool or item could reasonably be expected to cause serious damage to personnel/equipment or adversely affect research and development (R&D) mission accomplishment will be designated FOD critical. The following areas are, by their nature, FOD critical areas: Work on or near the flightline, work on or near aircraft/engines and work on equipment designated to be installed on an aerospace vehicle.
10.2.1.18. (Added) Procedures for long term tool kit (CTK/ITK) storage.
10.2.1.19. (Added) Procedures for control of TMDE issued/dispatched in work areas.
10.2.1.20. (Added) Procedures for control of shop machine accessories/attachments.
10.2.1.21. (Added) Procedures for control of tooling included in TCTO/Mod Kits.
10.2.1.22. (Added) Procedures for loaned tools to include issue, tracking, duration, and verification.
10.2.1.23. (Added) Procedures for training personnel on tool control and accountability measures.
10.3.2. Consider deployment taskings, temporary duty (TDY), and special test project requirements when making CTK determinations. Insure user input is considered when determining quantity, content and layout of toolkits.
10.3.6. Tools will be described on the MIL to accurately depict the actual size or type to ensure positive tool control, i.e. screwdriver, common, 6 inches; socket, 3/8 drive X 5/8. Flight/section chiefs or equivalent will ensure MIL is updated, approved and signed at least annually.
NOTE: Flight commanders/flight chiefs or equivalent must review and sign the MIL. For weapons load crew CTKs, the WWM will approve and sign the MIL. A copy of the MIL will also remain in each CTK/equipment kit at all times for inventory purposes.
10.3.6.5.1 If not using the MIL or TAS to document missing/removed tools then use AFMC IMT Form 61 to annotate missing/removed tools

10.3.10. MXG/CC (MXW/CC or equivalent functional authority for maintenance) will determine marking requirements. At a minimum, these markings will identify the individual.
10.3.13. (Added) Tool Replacement Procedures. A stock of spare tools is authorized to replace broken, worn, or missing tools to prevent unnecessary work delays. Spare and consumable tools are highly pilferable and pose an increased fraud, waste, and abuse potential. The AMXS/MXS Operations Officer/Superintendent or equivalent will establish strict controls to include the following:
10.3.13.1. (Added) Inventory and document all replacement tools quarterly.
10.3.13.2. (Added) Replacement tools will not be issued without receipt of the unserviceable tool or documentation indicating the tool is lost and reported.
10.3.13.3. (Added) Replacement tools must be marked with the CTK WWID prior to issue.
10.3.13.3.1. (Added) CPSD and AEDC will replace local marking system through attrition. As new tool kits are built, or existing kits are replaced, the WWID will be utilized.
10.3.13.4. (Added) If previously issued serviceable tools are to be used as replacement tools, completely de-etch any prior CTK WWID assigned markings.
10.4.1. Contractors, MEOs and CPSD are required to use a system of their choice as long as it complies with the intent of the program.
10.4.1.2. If an automated system is not available, units may use AFMC Form 62, <i>CTK Inventory and Control Log</i> , to sign in and out CTKs/TKs and use AFMC Form 61, <i>Missing/Removed Tools and Equipment</i> , to document Missing/Removed tools.
10.4.2. If an automated system is not available, units may use AFMC IMT 62 or computer generated equivalent to document separate shift inventories.
10.4.2.1. Include all tools, non CA/CRL and CA/CRL equipment and equipment kits.
10.4.2.1.1. (Added) Local publications will specify inventory procedures (e.g. frequency, responsibilities, breaks, lunch time, when an individual leaves, CTK used by more than one person, etc.). The intent is to be able to identify the point at which a lost item would most effectively be located.
10.4.2.1.2. (Added) Supervisors are responsible for tool and equipment accountability and control. When a person removes a tool or piece of equipment, they are responsible for that item until it is returned. Local publications will provide procedure for accountability when items are removed. Supervisors will be responsible to initiate lost tool procedures.

10.4.3.3. Units may use e-tools for maintenance documentation IAW TO 00-20-2.
10.5.1.3. Do not de-etch tool part numbers.
10.5.4. Do not create a new EID for TMDE assets. Utilize the existing bar code number on the AFTO Form 65/66 attached by PMEL. Annotate the existing TMDE bar code numbers on the MIL.
10.6. Locally Manufactured, Developed, or Modified Tools and Equipment. All locally manufactured, developed, or modified tools and equipment must be approved by the MXW/CC/CL/CD or appropriate level or their designated representative.
10.8.1.5. Initiate AFMC Form 310, <i>Lost/Found Item Report</i> if the item is not found within two hours of search. Maintain reports in QA section for two years.
10.8.1.7. If not found, the MOC will notify the MXW/CC/CL/CD of the missing item/tool.
Chapter 11 - MAINTENANCE SUPPLY SUPPORT
This section intentionally left blank. No supplemental data necessary.
Chapter 12 - WING WEAPONS MANAGER AND WEAPONS STANDARDIZATION
NOTE: Sections 12.1 and 12.2 not applicable to NSO's.
12.12.2. WWM, Weapons Flt Chief, or LSC will decertify and disqualify individual load crew members if they:
12.15. Load Crew Semi-Annual Evaluations. In test wings with no Primary Munitions listed on their TTML. The LSC will use a Limited Use Munitions to satisfy semi-annual evaluations.
Chapter 13 - MOBILITY AIRCRAFT DEFENSIVE SYSTEMS LOADING POLICY
This section intentionally left blank. No supplemental data necessary.
Chapter 14 - ADDITIONAL MAINTENANCE REQUIREMENTS AND PROGRAMS
DEV 14.1.1.3. ABDR support shall be accomplished IAW AFI 61-101, <i>Scientific/Research and Development Applied Technology Council</i> and AFI 63-101, <i>Acquisition and Sustainment Life Cycle Management</i> .
DEV 14.1.1.3.1. Not applicable.
DEV 14.1.1.3.2. Not applicable.

DEV 14.1.1.3.3. Not applicable.
DEV 14.1.1.3.4. Not applicable.
DEV 14.1.1.3.5. Not applicable.
14.1.2. (Added) The ABDR team chief is principal advisor to the supported commander on ABDR. The team chief will report to MXG/CC/CL or equivalent upon arrival.
14.4.4. MXG/CC/CL or equivalent will determine minimum number of certifiers based on mission requirement. Initial certification will take place within 30 days of completion of formal training.
14.4.4.1. Personnel decertified for cause will attend the engine inlet inspection course and be recertified by a certifying official.
14.6.1. The OPR for AFMC is AFMC/A4MM.
14.7.2.3. (Added) AGE personnel will purify AGE equipment only. Hydraulic systems and test stands will be purified by hydraulic support personnel.
14.8.10.1. The MXG/CC/CL or designated representative will coordinate CANNs in this instance through HQ AFMC/A4RE.
14.10.5.8.11. (Added) Coordinate recovery actions with the appropriate contractor(s) and weapons system expert(s) as needed.
14.11. Dropped Object Prevention (DOP) Program. Dropped objects will also include unintentional/inadvertent dropped tow equipment, tow targets, drones, and missile, rocket, or aerospace platform hardware, etc., and will be reported regardless of reason for release/drop, as a dropped object to the Command FOD/DOP Manager. The intentional release of tow targets, drones, etc., when the reason for release is the malfunction of equipment, are not considered a dropped object and will be reported IAW AFI 91-204. Any object dislodged by a FO [e.g., an in-flight refueling (IFR) boom or a bird] is not considered a dropped object. Preventable dropped objects are defined as any item which was lost due to negligence during inspection or improper installation.
14.11.1.1. HQ AFMC/A4M will act as OPR for all Command dropped object field inquiries. The wing or equivalent FOD monitor will be designated as the wing DOP monitor aligned under the WG/CV. The MXG/CC/CL, or equivalent, will ensure all flight crews and assigned maintenance personnel are briefed on the DOP on a recurring basis, at least annually. Aircrew members should receive these briefings as part of regular aircrew meetings to maximize aircrew awareness. Maintenance personnel should receive these briefings as part of squadron commanders' calls, unit roll calls, or other appropriate formation to maximize personnel awareness.

14.11.1.2. Training. Annotate DOP training in appropriate training records or in MIS. Training should include, but is not limited to, inspection, installation, removal, and repair procedures for aircraft panels, doors, access covers, cowlings, etc. Also, include training on the care of panel latches, fasteners, nut plates, and other locking devices. Security of hardware, particularly those causing a high incidence of dropped objects, will be high interest items on aircrew walk-around.
14.11.1.5.4. (Added) Quarterly. The wing DOP monitor will report to the wing Maintenance Management Analysis (MMA) section all dropped objects, to include MDS, date of incident, nomenclature (NOUN), national stock number (NSN), cost, specific cause, and any action(s) taken to prevent reoccurrence. This information will be reported the third month of each quarter (e.g., Oct, Nov, and Dec data will be reported in Jan report) using the monthly aircraft logistics indicators report. Summary of this data will be briefed in conjunction with quarterly FOD meeting.
14.14.4.4. (Added) Initial engine blade blending certification.
14.14.5. MXG/CC/CL or designated representative will determine the number of certifiers per engine TMS to ensure standardized training and certification.
14.15.1.3. (Added) The MTF, or equivalent, will review approved engine run certification procedures annually for accuracy.
14.15.5.3. Individuals are task evaluated by an authorized certifying official (an individual other than the instructor who administered the course) and after successful completion placed on the SCR.
14.15.6.5. (Added) Each individual will receive a practical engine/APU/GTC/APP run evaluation after successful completion of classroom training and emergency bold face procedures from an authorized certifying official. As a minimum, the student will demonstrate successful completion of the areas listed in AFI 21-101 with no discrepancies based on the "go/no-go" standard.
14.15.8. To maintain proficiency, maintenance personnel authorized to operate engine will perform at least one engine run every 90 days.
14.15.11.8. (Added) Personnel must acquire at least 6 months experience on the MDS.
14.15.12. Qualifications of GTC/APU/APP certified personnel/certifiers will also be documented in MIS and entered on SCR.
14.15.13. To maintain proficiency, maintenance personnel authorized to operate engines and APU/GTC/APP will perform at least one engine/APU/GTC/APP run every 90 days.
14.15.13.1. Upon certification, personnel will be placed and tracked on the SCR by MDS, Type, Make, Series, Modification (TMSM), and authorized engine power settings.

14.15.13.3. (Added) Individuals authorized to operate the trim box will perform at least one trim utilizing the trim box, every 180 days.
14.15.15.1. Contractor personnel may be authorized to run uninstalled engines and/or small gas turbine engines when designated in writing by the respective MXG/CC/CL or equivalent.
14.15.15.1.4. (Added) Qualifications will remain valid for 12 months unless disqualified for cause.
14.15.15.6. All uninstalled engine/small gas turbine engine run certified individuals and certifiers will run at least one engine every 180 days. When not feasible to run every 180 days, individuals will complete part I and part II tests to maintain proficiency.
14.15.16.2.2.3. (Added) Notification procedures in the event of a Halon discharge will include HQ AFMC/A4M.
14.15.16.4. Certification will be tracked in MIS and SCR.
14.15.17.8.1. (Added) Annual recertification will consist of a certifier conducting an F100-PW-100 or -200 trim box evaluation (Power-Off) operator evaluation using the work center training plan. Certifying officials will recertify each other.
14.15.18. (Added) Special Test Projects. Some AFMC units will participate in special testing of uninstalled engines and/or small gas turbine engines that do not fall within the scope of the normal certification processes outlined in this chapter. Under these circumstances, the affected unit will apply the following guidelines to ensure test project engines are operated to the safest extent possible:
14.15.18.1. (Added) Ensure test projects requiring engine operation that do not have approved Air Force TO procedures will be approved by the MXG/CC/CL or equivalent and appropriate safety agencies.
14.15.18.2. (Added) When engine operating procedures do not exist in Air Force TOs, test project plans will specify use of commercial engine operating manuals (if they exist) and appoint a contractor or USAF test engineer for the duration of engine testing.
14.17.2. Any damage found by a certified 5-skill level will be verified by a certified 7-skill level or civilian equivalent.
14.17.3. Course material/instruction will include high interest borescope inspections (e.g. blade tip curl HS3 inspection on the F100-series engine).
14.17.4. Includes civilian equivalents. MXG/CC/CL or designated representative will determine the number of certifiers based on mission requirements. For task certification, technicians will

demonstrate proper care and handling, as well as ability to perform any high interest borescope inspections (e.g. blade tip curl HS3 inspection on the F100-series engine), when applicable.
14.17.5. Document civilian training records, as required.
14.17.8. A QA personnel evaluation (PE) may be used to satisfy this requirement if the QA evaluator is a certifying official. Personnel decertified for cause will attend flexible borescope training and be recertified by a certifying official.
14.17.8.1. (Added) Annual recertification will include a high interest borescope inspection (e.g. blade tip curl HS3 inspection on the F100-series engine), when applicable.
14.18.6.1.1. Normally a SSgt or TSgt 5- or 7- skill-level (or civilian equivalent). Qualified technicians of higher rank are eligible.
14.18.6.2.1. May be a 5-level A1C or above with at least a SEI on their assigned aircraft (or civilian equivalent) and must accompany a fully qualified FCC.
14.19.2.5. In addition to the parent document, restricted area badges will be secured with any of the following type devices: plastic armband; nylon neck cord with breakaway feature, or button with nylon macramé that can be securely affixed to the uniform. The use of metal on these items should be kept at a minimum, (i.e. clip or spiral key ring) and if used; ensure that it cannot be separated from the cord. They will also be removed when any other AFI/TO or hazardous situation is identified.
14.19.2.8. Containers will be stenciled with the word “FOD” in contrasting letters no smaller than two inches IAW AFI 24-302. Back shops may locally manufacture small FO containers that can be used when an area collection can is not feasible. These containers must be stenciled with the word “FOD” in contrasting letters no smaller than two inches. All FOD containers, regardless of location, will be emptied when full or once a day, whichever comes first.
14.19.2.8.1. (Added) Procedures will also apply to those vehicles normally driven in maintenance production areas.
14.19.2.9. Establish and tailor rivet replacement procedures for local operation of assigned weapons systems. Include the procedures as part of the FOD orientation/familiarization for personnel working in these areas. Include work order residue control procedures for all maintenance performed in and around intake areas.
14.19.2.9.1. (Added) Aircraft Structural Maintenance shops and Low Observable Aircraft Structural Maintenance shops will develop local publication checklist for intake repairs. All parts and pieces installed and removed from the aircraft will be documented and verified by a 7-level. The checklist will be completed on the job site and turned into QA within 24 hours of repair completion. Aircraft Structural Maintenance and Low Observable Aircraft Structural Maintenance technicians are not required to meet the training requirements of Paragraph 14.4.

14.19.2.17. When inspecting tires, ensure a roll-over check is completed to ensure the entire surfaces inspected for FOD, including the unseen area in contact with the pavement.
14.19.2.21. Leave inspection and load tolerance tags attached.
14.19.3.1. The FOD prevention program oversight is placed at the wing level to emphasize that FOD prevention is a team effort requiring support from all base units. The Wing FOD Monitor should possess a 2A671A/B, 2A571, or 2A373 AFSC (or civilian equivalent). It is highly recommended that the Wing FOD Monitor attend the Jet Engine Mishap Investigation Course.
14.19.3.2.1. Ensure all maintenance, operations, base support, and contractor personnel who work in, around, or drive through maintenance and/or operational areas are trained on FOD prevention annually. Ensures an initial FOD awareness/responsibilities briefing is given to all newly assigned personnel.
14.19.3.2.7. (Added) Ensures the wing submits maintenance crosstell reports by message to HQ AFMC/A4M and to all units with like MDSs for incidents that have a FOD potential for the fleet.
14.19.3.3. (Added) Command FOD Manager. The Command FOD Manager is located at HQ AFMC/A4M and shall:
14.19.3.3.1. (Added) Conduct annual AFMC FOD meetings.
14.19.3.3.2. (Added) Clarify policy and assist units in resolving FOD issues.
14.19.3.3.3. (Added) Work with other MAJCOM FOD managers to resolve FOD issues between the Centers and owning commands.
14.19.3.3.4. (Added) Notify lead command of FOD incidents.
14.19.3.3.5. (Added) Command FOD/DOP Manager responsibilities include:
14.19.3.3.5.1. (Added) Providing quarterly and annual FOD/DOP roll-up data to A4.
14.19.3.3.5.2. (Added) Conducting annual AFMC FOD/DOP meeting either in-person or telecom.
14.19.3.3.5.3. (Added) Establishing FOD/DOP command reporting procedures.
14.19.3.3.5.3.1. (Added) Computing Wing rates monthly. Wing FOD Monitor will submit AFMC Form 40, <i>Foreign Object Damage Report</i> , to HQ AFMC/A4M by the 15 th of each month. Providing fiscal year roll up to HQ AFMC/A4M NLT 15 October.
14.19.3.3.5.3.2. (Added) Ensuring each Wing FOD monitor submits FOD quarterly (monthly if exceeding FOD standard of 3.0) reports to HQ AFMC/A4M workflow NLT the 15 th day of the

new quarter. Reports will include monthly cumulative FOD data in the following format:
14.19.3.3.5.3.2.1. (Added) Number of preventable and non-preventable FODs (damage exceeding \$50K).
14.19.3.3.5.3.2.2. (Added) Causes of preventable and non-preventable FODs.
14.19.3.3.5.3.2.3. (Added) Cumulative cost of preventable and non-preventable FODs.
14.19.3.3.5.3.2.4. (Added) MDS flying hours.
14.19.3.3.5.3.2.5. (Added) Calculated unit FOD rate by MDS and current cumulative fiscal year FOD rate.
14.19.4.6. (Added) Review and analyze all unit FOD mishap reports and other data for trends that identify areas requiring management action. Newly assigned FOD monitor will:
14.19.4.6.1. (Added) Review all applicable FOD/DOP program instructions, HQ AFMC LSET FOD/DOP checklist, and validate locally developed self-inspection checklists within 30 days of being assigned.
14.19.4.6.2. (Added) Review and validate FOD/DOP program continuity books, and develop and maintain program continuity if not made available at time of assignment. Ensure continuity programs are in place that depict procedures for accomplishing tasks associated with each duty position. Develop continuity book IAW local publication.
14.19.4.6.3. (Added) Complete all training requirements.
14.19.4.6.4. (Added) Contact Command FOD/DOP program manager for assistance as needed.
14.19.4.7. (Added) Ensure engine inlet run-up screens and anti-personnel guards are used IAW applicable technical data.
14.19.4.8. (Added) Ensure QA inspection checklists/evaluations include FOD prevention.
14.19.4.9. (Added) Ensure evaluated or repaired engine FOD is documented in the AFTO Form 95 IAW TOs 00-20-1 and 00-20-2.
14.19.4.10. (Added) Ensure tenant units appoint a unit FOD monitor for their units and that they are actively involved on the host wing's FOD prevention program/committee.
14.19.4.11. (Added) Ensure wing detachments establish a FOD prevention program and provide FOD reports to the parent wing's FOD monitor.
14.19.5.1. MOC will immediately notify Airfield Management when cut or damaged tires are

discovered after taxiing or aircraft tows.
14.19.5.2.2. Determined after investigation.
14.19.5.6.1. Format, at a minimum, will be IAW Attachment 12 . The following FOD/DOP incident reporting requirements will be followed:
14.19.5.6.1.1. (Added) The Wing FOD/DOP monitor will submit ALL FOD/DOP incidents with the exception of minor sand nicks and scratches to. Forward the completed initial FOD or DOP report to "HQ AFMC/A4M Workflow." Inform the Wing CV or equivalent of all incidents.
14.19.5.6.1.2. (Added) Use guidance for FOD/DOP control numbers as written on Attachment 12 .
14.19.5.6.1.3. (Added) The Wing FOD/DOP monitor will ensure the investigation has been completed and all data for the FOD/DOP report is accurate and complete before closing the report.
14.19.5.6.2. (Added) Establish a Wing level FOD/DOP Organizational group email address.
14.19.5.6.3. (Added) If the FOD incident is deemed a mishap IAW AFI 91-204, the Wing FOD monitor will still initially report the FOD incident then work in tandem with the Wing SE office to properly report the mishap.
14.19.5.6.4. (Added) All DCMA managed units at contracted facilities will report FOD incidents to Command FOD/DOP manager IAW 14.19.5.6. and 14.19.5.6.1. on AFMC possessed/ assigned aircraft.
14.19.5.7. The preventable FOD standard for AFMC is 3.0.
14.19.5.8. (Added) When transient/deployed aircraft incur FOD, the host unit will conduct the investigation and notify the owning organization immediately.
14.19.5.9. (Added) The owning organization is responsible for FOD incidents and investigations on transient aircraft/engines when one of the following conditions applies:
14.19.5.9.1. (Added) FOD is discovered upon arrival at a transient base with no intermediate stops or prior to any engine run.
14.19.5.9.2. (Added) FOD is found during initial tear down on queen bee/ ERRC engines.
14.19.5.9.3. (Added) When the owning organization's maintainers are deployed with the aircraft and the FOD is a direct result of transient/deployed unit negligence.

14.19.5.10. **(Added)** FOD discovered by transient alert facilities or by depot and contractor facilities during acceptance inspections will be charged to the base from which the aircraft last departed if a FOD inspection was not accomplished/documented and there were no intermediate stops.

14.19.5.11. **(Added)** For F-15 aircraft sustaining engine FOD caused by an unknown source, extend the vari-ramps, thoroughly inspect all accessible components and areas within vari-ramps cavity, close vari-ramps, X-ray vari-ramps and lower louver areas IAW applicable TO, then compare these X-rays with previous X-rays of the aircraft to determine movement or missing items.

14.19.5.12. **(Added)** For Class A and other mishaps, investigation personnel will coordinate with the wing or base safety office to ensure AFI 91-204, *Safety Investigations and Reports* requirements are met.

14.19.6. Additionally, the following will be considered for minimum attendance at the FOD Prevention Committee Meeting: Center FOD Monitor, the designated Union representative, Center or Wing Maintenance Training, Flight test representative, Contracting (as applicable), Center tool control manager, and the ABW/CV.

14.19.6.1. In addition to the agenda items, the minutes will include as a minimum a list of attendees and absentees. "Attendees" list will identify the wing FOD monitor and provide functional address symbol and duty phone number for all personnel. Meeting minutes will be made available to FOD committee members.

14.20.1. Cannot Duplicate (CND) Discrepancies. Personnel will make every effort to duplicate the circumstances that created the reported discrepancy. When a discrepancy cannot be duplicated, the technician will document "Cannot Duplicate Malfunction" or "CND" in the corrective action block, and ensure the symbol is cleared IAW TO 00-20-1.

14.20.3. **(Added)** Deferred Discrepancy Management

14.20.3.1. **(Added)** Deferred Discrepancies. Timely accomplishment of deferred maintenance is the responsibility of the applicable AMU and/or MXS Flights. Uncorrected discrepancies not creating NMC or PMC status are deferred discrepancies and loaded into MIS as soon as possible. Discrepancies are considered deferred as soon as they are discovered and the decision is made to delay corrective action. Discrepancies deferred due to non-availability of parts are promptly loaded to MIS when backordered through supply. The decentralized supply support/material control section enters supply data against deferred discrepancies and notifies the PS&D and work center once parts are received. Discrepancies will not remain in "unscheduled" status for more than 1 workday from the date of discovery. Discrepancies with a scheduled start date and time greater than 5 days after the date of discovery are reportable deferred discrepancies. Discrepancies scheduled but not accomplished on the date scheduled are counted and reported in the deferred discrepancy rate. AWP discrepancies with a valid off-base requisition are reportable deferred discrepancies. TCTOs, TCIs, SIs, and OTIs in deferred status are not reportable deferred discrepancies.

14.20.3.1.1. (Added) The deferred discrepancy file, although centralized in the computer, is still considered as two separate and distinct files: one consisting of discrepancies AWP, and the other consisting of discrepancies AWM. The responsibility for maintaining AWM discrepancies in MIS lies with the technician who makes the inputs. The MX Supt or designated representative will develop procedures for reviewing the deferred discrepancy file and identifying any problem areas requiring resolution. Constant monitoring of MIS (IMDS screen #380) is required to ensure scheduled work is deferred again if not completed. The AWP file is maintained by decentralized supply support/materiel control.
14.20.3.1.2. (Added) Equipment discrepancy files for equipment other than aircraft, may be decentralized to the appropriate shop.
14.20.4. (Added) Discrepancies deferred for parts:
14.20.4.1. (Added) Decentralized supply support/materiel control promptly loads the supply document number into MIS for each aircraft discrepancy, which cannot be corrected due to backordered parts. Units using the SBSS module of MIS follow procedures outlined in AFCSM 21-579, Vol 2.
14.20.4.2. (Added) The decentralized supply support/materiel control notifies the production superintendent, expediter, and MOC when MICAP parts are received.
14.20.4.3. (Added) Items picked up from the TNB or issued from base supply, but are not installed, will be returned to the TNB by the end of the duty day, with a DD Form 1348-1A and appropriate condition tag.
14.21.2.2.8. Quality Assurance shall perform an aircraft records review a minimum of every 60 days.
14.21.2.2.10.6. (Added) QA will monitor assigned GITA for safety and serviceability.
14.22.3.2.1. (Added) Units will report Category 2 Hangar Queen to Lead Command providing Top Down drivers for Hangar Queen status updated on a monthly basis. The minimum information required to report is:
14.22.3.2.1.1. (Added) Hangar Queen Management POC.
14.22.3.2.1.2. (Added) Aircraft MDS and Tail #.
14.22.3.2.1.3. (Added) Unit of Assignment/Possession.
14.22.3.2.1.4. (Added) Date last flown.
14.22.1.2.1.5. (Added) Reason for Hangar Queen status.

14.22.1.2.1.6. (Added) Document number for parts on order for reason of Hangar Queen status.
14.22.1.2.1.7. (Added) Estimated next fly day.
14.22.1.2.1.8. (Added) Is Lead Command assistance required.
14.22.3.3.1. (Added) Units will report Category 3 Hangar Queen to Lead Command providing Top Down drivers for Hangar Queen status updated on a monthly basis. The minimum information required to report is:
14.22.3.3.1.1. (Added) Hangar Queen Management POC.
14.22.3.3.1.2. (Added) Aircraft MDS and Tail #.
14.22.3.3.1.3. (Added) Unit of Assignment/Possession.
14.22.3.3.1.4. (Added) Date last flown.
14.22.1.3.1.5. (Added-AFMC) Reason for Hangar Queen status.
14.22.1.3.1.6. (Added) Document number for parts on order for reason of Hangar Queen status.
14.22.1.3.1.7. (Added) Estimated next fly day.
14.22.1.3.1.8. (Added) Is Lead Command assistance required.
14.23.15. Training and certification requirements for hot refuel team members are outlined in Table 14.2. (Added) .
14.23.15.1. (Added) Personnel are decertified if they miss any semi-annual proficiency requirement or annual special requirement. Personnel can also be decertified by any hot/aircraft-to-aircraft refueling supervisor, squadron/immediate supervisor, or QA any time one of these individuals sees an unsafe act or demonstrated lack of proficiency on the part of any hot/aircraft-to-aircraft refueling team member.
14.34.3. In addition to the mandatory prerequisites identified in AFI 21-101, include the following (separately or in combination) on unit SCR: See Table 14.1
Table 14.1. Mandatory Special Certification Roster (SCR) and Prerequisites

Item	A	B
	Mandatory SCR Item Titles	Prerequisites
39 (Added)		
	NOTE: For tankers, airlift, bomber and passenger aircraft include the following on SCR	
40 (Added)	Landing Gear Retraction Supervisor	(Supervisor) SSgt or higher or civilian equivalent, minimum 7-skill level.
41 (Added)	Landing Gear Retraction Member	(Gear handle operator) minimum 5-skill level, and 1 year flight line experience
42 (Added)	Jacking supervisor	Minimum 7-skill level or civilian equivalent, 6 months system experience
43 (Added)	Jacking Manifold Operator	Minimum 5-skill level or civilian equivalent, 6 months system experience
44 (Added)	Integral Jacking Member (C-17)	Minimum 6 months C-17 experience (Note 2)
45 (Added)	Integral Jacking Supervisor (C-17)	Minimum SSgt (or civilian equivalent), 6 months minimum C-17 system experience (Note 2) (MXG/CC may waive selected SrA FCCs)
46 (Added)	Integral Jacking Certifying Official (C-17)	Minimum 7-skill level or civilian equivalent, with minimum 1 year C-17 experience

Table 14.2. (Added) Hot/Aircraft-to-Aircraft Refueling Training/Certification Requirements.

Position	Required Training	Proficiency Requirements	Special Requirements
Squadron Certifier	I, II, III	1 Hot Refuel Semi-Annually	Annual Evaluation and one PE by QA Chief Inspector
Pad Supervisor	I, II, III	1 Multiple Hot Refuel Semi-Annually	Annual Evaluation by QA or SC
Refuel A,B,C,D Member	I, II, III	1 Hot Refuel Semi-Annually, "C" Annually	Annual Evaluation by QA or SC
Decertified Squadron Certifier or Pad Supervisor	Repeat II, III		Recertification must be started within 90 days or Phase I will also be completed PE by QA Chief Inspector
Decertified A,B,C,D	Repeat II, III		Recertification must be started within 90 days or Phase I will also be

			completed
14.38. (Added) Oil Analysis Program.			
14.38.1. (Added) General. Accurate oil sampling determines the internal condition of engines and accessories. Coordination with the OAP laboratory is required to obtain maximum benefits from OAP data when abnormal wear metal trends are indicated. It is imperative that an aggressive unit OAP be established and specific responsibilities and requirements are adhered to. AFI 21-124, provides procedural guidance and assigns responsibility for managing the Air Force Oil Analysis Program (OAP) and for participating in the Joint Oil Analysis Program (JOAP). Specific responsibilities, procedures, and requirements will be locally developed and formalized as a local directive. Aircraft which do not have a TO oil analysis requirement are exempt from this program.			
14.38.2. (Added) HQ AFMC/A4MM responsibilities:			
14.38.2.1. (Added) Manage the command OAP program.			
14.38.2.2. (Added) Appoint a qualified SNCO (or civilian equivalent) to manage the OAP and serve as a point of contact for OAP activities.			
14.38.3. (Added) MXG/CC/CL or equivalent responsibilities:			
14.38.3.1. (Added) Appoints a Wing OAP Manager and alternate and forwards copy of appointment letter to the OAP laboratory.			
14.38.3.2. (Added) Ensure all units maintain an effective wing OAP.			
14.38.3.3. (Added) Manage the OAP IAW TO 33-1-37-1/2/3, AFI 21-124, and other applicable directives.			
14.38.3.4. (Added) Ensure a wing OAP instruction and training plan is published to establish policy and procedures for the wing OAP. Include a standardized method to ensure the total oil serviced since the last OAP sample can be tracked and accurately entered on the DD Form 2026, <i>Oil Analysis Request</i> .			
14.38.3.5. (Added) Ensure the non-destructive inspection (NDI)/OAP facility is on a priority repair list for CE.			
14.38.3.5.1. (Added) Develop procedures for continued operation of OAP lab in case of a power outage.			
14.38.3.6. (Added) Ensure the NDI/OAP facility has a Class A telephone and a direct line to MOC to expedite the reporting of abnormal wear metal trends.			

14.38.3.7. (Added) Ensure all organizations requiring OAP support appoint an OAP monitor and alternate in writing.
14.38.3. 7.1. (Added) Ensure a current approved copy of the appointment letter is kept on file by the requesting organization and a copy sent to the OAP laboratory and the wing OAP manager.
14.38.3.8. (Added) Personnel involved in OAP will be trained IAW the wing's OAP training plan. Personnel requiring this training include, but are not limited to, crew chiefs, expeditors, production supervisors, aircraft flight chiefs, unit OAP monitors, propulsion managers/supervisors, and aircraft maintenance operation officers/superintendents.
14.38.3.9. (Added) Conduct quarterly OAP meetings with director(s), MOS, MXA/ superintendent, propulsion flight chief, unit OAP monitor or alternates, and NDI section NCOIC/ designated representative.
14.38.4. (Added) AMXS/MXA responsibilities:
14.38.4.1. (Added) Ensure all assigned aircraft engines are sampled IAW applicable -6 TO.
14.38.4.1.1. (Added) The only exception to this is when aircraft are hot refueled (Aircraft land and takeoff with no engine shutdown). When this occurs: A-10 aircraft will be sampled immediately after the second pit and go sortie with OAP sample results known prior to the next sortie (only two sorties flown due to hotpit refuel before an OAP sample is taken and analyzed and the results known); F-16 aircraft with Pratt and Whitney (P&W) engines will be sampled immediately after the first pit and go sortie with OAP sample results known prior to the next sortie (only one OAP sample interval can be missed due to hot refuel); and F-15 aircraft, regardless of installed engine type, and F-16 aircraft with General Electric (GE) engines will be sampled at the first return to parking with OAP sample results known prior to the next sortie.
14.38.4.2. (Added) Ensure aircraft that fails to meet required OAP Sample Response Time (SRT) or are not sampled as required by applicable -6 are not flown until OAP sample results are known.
14.38.4.3. (Added) Ensure OAP samples not taken within the required time period by the applicable -6 have a 15 minute ground run accomplished prior to the engine being sampled. This ensures a true homogenous sample is obtained for an accurate analysis.
14.38.4.4. (Added) Ensure OAP samples are delivered to the OAP lab with a DD IMT 2026 or locally overprinted DD IMT 2026, Oil Analysis Request , filled out IAW TO 33-1-37-1. Qualified technicians will fill out the DD Forms 2026 completing the oil added, hours since overhaul, hours since oil change, and time sample taken blocks indicating when the oil sample was taken.

14.38.4.4.1. (Added) Use engine flight time in the DD Form 2026 “hours/miles since overhaul” block. EXCEPTION: F100 series engine wear metal trends are based on engine operating time. This time will be downloaded at the end of the flying day for F100-220/229 engines requiring aircraft and NDI/OAP lab records to be adjusted accordingly.
14.38.4.5. (Added) Ensure flightline personnel verify with the OAP lab that information entered in the OAP records on the DD Form 2027, <i>Oil Analysis Record</i> , or automated OAP records matches the scheduled aircraft records check. As a minimum, the information that will be verified is engine operating hours, time since oil change, oil serviced since last records check or OAP sample, engine serial number(s), and aircraft serial number. NOTE: MXG/CC/CL/CD (or equivalent) may waive verification of OAP records against aircraft records when aircraft are deployed and scheduled records check is due.
14.38.4.6. (Added) Identify AMXS OAP monitors and alternates in writing and forward a copy of the appointment letter to the wing OAP manager and the OAP lab. Appointment letters should include grade, name, duty phone, AFSC, organization, and office symbol.
14.38.4.6.1. (Added) The unit OAP monitor will be an NCO or civilian equivalent with experience necessary to manage unit’s program. They serve as the primary liaison between the OAP labs for all OAP issues and will attend all OAP meetings.
14.38.4.7. (Added) Ensure OAP monitors are properly trained as required in TO 33-1-37-1.
14.38.4.8. (Added) Ensure all aircraft engines under special OAP codes C, E, and F are not flown until results of the OAP sample(s) are known.
14.38.4.9. (Added) Ensure DD Forms 2026, with an equipment and/or end item serial number error, hours since overhaul error, or oil added since last sample error are corrected immediately.
14.38.4.10. (Added) Ensure flightline expeditors maintain a OAP status on each assigned aircraft engine showing all lab recommendation codes that are not routine (code A) next to the aircraft serial number.
14.38.4.11. (Added) Ensure all maintenance actions that affect oil-wetted engine components are provided to the OAP lab. This should be done by using the remarks section of the DD Form 2026 (or a suitable local form).
14.38.4.12. (Added) Ensure MOC is notified of information regarding engine changes on- and off-station as they occur, but NLT 0800 the next duty day.
14.38.5. (Added) Propulsion flight chief responsibilities. In addition to the responsibilities outlined in Chapter 2 of this instruction, the flight chief will:
14.38.5.1. (Added) Ensure accurate and timely deficiency reports (DR) are submitted through the unit product improvement manager (PIM) to the applicable Air Logistics Center (ALC) engine program offices on all engines requiring tear down or overhaul due to an OAP laboratory

maintenance recommendation and on all oil-wetted component failures where no OAP laboratory maintenance recommendation was made.
14.38.5.2. (Added) Ensure a copy of the DD Form 2027 (or suitable automated form) is provided to the depot for each engine undergoing scheduled maintenance or overhaul at the depot.
14.38.5.3. (Added) Make the final decision regarding all OAP engine maintenance action recommendations.
14.38.5.4. (Added) Ensure all maintenance actions which affect oil-wetted engine components, are provided to the OAP laboratory. This should be done by using the remarks section of DD Form 2026 (or a suitable local form).
14.38.5.5. (Added) Appoint OAP monitors in writing and forward a copy of appointment letter to wing OAP manager and OAP lab. Appointment letters should include grade, name, duty phone, AFSC, organization, and office symbol.
14.38.5.6. (Added) Ensure OAP monitors are trained as required IAW TO 33-1-37-1.
14.38.5.7. (Added) Ensure assigned OAP monitors or alternates attend all OAP meetings.
14.38.5.8. (Added) Ensure oil samples taken at the test cell are promptly delivered to the OAP laboratory. Red cap samples will be delivered immediately for analysis.
14.38.5.8.1. (Added) Engines will not be removed from the test stand until the sample results have been analyzed.
14.38.6. (Added) MOC Supervisor responsibilities. The supervisor will:
14.38.6.1. (Added) Maintain an OAP status on each assigned aircraft engine showing all lab recommendation codes that are not routine (Code A) next to the aircraft serial number.
14.38.6.2. (Added) Serve as primary communications link for the transfer of OAP information between the OAP lab and its customers.
14.38.6.3. (Added) Relay to the OAP lab, information regarding engine changes on- and off-station as they occur, but NLT 0800 the next duty day.
14.38.7. (Added) NDI/OAP Laboratory NCOIC responsibilities.
14.38.7.1. (Added) Primary OAP responsibilities outlined in TO 33-1-37-1/2/3 apply whether or not the laboratory providing OAP support is located on the same base. If the unit does not have NDI personnel assigned, the OAP responsibilities outlined in TO 33-1-37-1/2/3 are assigned to the propulsion flight. The OAP OPR forwards samples in a timely manner to the laboratory

providing OAP support.
14.38.7.2. (Added) Sets up collection points and procedures to receive and forward OAP samples to the supporting laboratory, monitors sample collection, assigns control numbers and provides blocks of sample control numbers for use in other squadrons.
14.38.7.3. (Added) Advises squadron maintenance operations, MOC, and OWC of abnormal OAP trends. Local procedures will be established to ensure proper notification of abnormal OAP trends.
14.38.7.4. (Added) Reviews response times, from sampling to receipt at the laboratory, and the time it takes for results to return to the unit to ensure processing of samples meets mission needs.
14.38.7.5. (Added) Operates the OAP laboratory and maintains environmental controls IAW TO 33-1-37-1/2/3, AFI 21-124, and other applicable directives.
14.38.7.6. (Added) Documents the scheduled record check on the affected engine's OAP record with the date the check was accomplished and OAP lab person's initials.
14.38.7.7. (Added) Ensures a copy of the DD Form 2027 (or suitable automated form) is provided to the propulsion flight for each engine undergoing scheduled maintenance or overhaul at the depot.
14.38.7.8. (Added) Immediately notifies MOC when an installed engine is restricted from operation or is placed on special sampling.
14.38.7.9. (Added) Ensures analysis results on all installed engines are provided to MOC after analysis of the OAP sample is complete.
14.38.7.10. (Added) Immediately notifies test cell and the propulsion flight chief when abnormal OAP results are discovered on test cell engines.
14.38.7.11. (Added) Ensures DD Form 2026, with an error(s) on equipment and/or end item serial number, hours since overhaul, or oil added since last sample are corrected immediately.
14.38.7.12. (Added) Tracks aircraft OAP SRTs for all assigned aircraft to ensure the response time requirements are being complied with.
14.38.7.13. (Added) Maintains a current appointment letter of all customer OAP managers.
14.38.8. (Added) OAP Sample Response Time (SRT) requirements for routine OAP samples. The OAP SRT time begins at the time the OAP sample is taken and ends at the time the oil analysis results are reported to the MOC. The following are SRTs:
14.38.8.1. (Added) Two and one half-hours for one and two engine aircraft.

14.38.8.2. (Added) Six hours for all other aircraft. When the OAP lab is not manned, they will provide results to MOC NLT two hours after the beginning of the next shift.
14.38.8.3. (Added) Immediately process special Red Cap samples (OAP lab recommendation codes B, C, E, F, G, P, and Q).
14.38.8.4. (Added) Four hours for engine ground/trim and test cell runs.
14.38.9. (Added) The following are OAP requirements for cross-country flights/deployments.
14.38.9.1. (Added) Personnel place an oil analysis record (Automated record or a copy of the DD Form 2027) in the aircraft records jacket/forms binder.
14.38.9.2. (Added) OAP lab personnel ensure the oil analysis record contains at least the last 10 analyses if available.
14.38.9.3. (Added) Personnel sign for the oil analysis record at the OAP lab and return it to the lab the day the aircraft returns to home station.
14.38.9.4. (Added) MOC notifies the OAP lab when cross-country/deployed aircraft return.
14.38.9.5. (Added) The OAP lab notifies MOC if the oil analysis record is not returned.
DEV Table 14.3. (Added) NSO Applicability Matrix

Non-Standard Organization	ASC	AEDC	ESC	NWC	CPSD
Section					
14.1. Aircraft Battle Damage Repair (ABDR)	N	N	N	N	N
14.2. Aircraft and Equipment Decontamination	N	N	N	N	N
14.3. Aircraft Grounding (Material Defect)	Y	N	N	N	N
14.4. Aircraft Inlet/Exhaust Certification	Y	N	N	N	N
14.5. Aircraft Rapid/Hot Defueling	N	N	N	N	N
14.6. Aircraft Structural Integrity (ASIP)	Y	N	N	N	N
14.7. Hydraulic Fluid Purification (HFP)	Y	N	N	N	N
14.8. Cannibalization Program	Y	N	N	N	N
14.9. Combat Sortie Generation	N	N	N	N	N
14.10. Crashed, Damaged or Disabled Aircraft Repair	Y	N	N	N	N
14.11. Dropped Object Prevention	Y	N	N	N	N
14.12. F100 Eddy Current Inspection	Y	N	N	N	N
14.13. End-of-Runway (EOR) Inspection	Y	N	N	N	N
14.14. Engine Blade Blending Training and Cert Prgm	Y	N	N	N	N
14.15. Engine Run Training and Certification Program	Y	N	N	N	N
14.16. Flash Blindness Protective Device	Y	N	N	N	N
14.17. Engine Flex Borescope Inspection Training/Cert	Y	N	N	N	N
14.18. Flying Crew Crew Chiefs (FCC)	N	N	N	N	N
14.19. Foreign Object Damaged (FOD) Prevention	Y	Y	Y	Y	Y**
14.20. Forms Documentation	Y	N	N	N	Y**
14.21. Ground Instructional Trainer Aircraft (GITA)	Y	N	N	N	N
14.22. Hangar Queen Aircraft	Y	N	N	N	N
14.23. Hot Refueling Procedures	Y	N	N	N	N
14.24. Land Mobile Radio (LMR) Management	Y	N	N	N	N
14.25. Lead Technician	Y	N	N	N	N
14.26. MRT Procedures	Y	N	N	N	N
14.27. Protective Aircraft Shelter (PAS) Environment	N	N	N	N	N
14.28. Radar Warning Receiver/Radar Threat Warning Test	Y	N	N	N	N
14.29. Ramp Inspection Program	Y	N	N	N	N
14.30. Red Ball Maintenance	Y	N	N	N	N
14.31. (SEM/EDX) Master Chip Detector Analysis Program	N	N	N	N	N

14.32. Self-Inspection Program	Y	Y	Y	Y	Y
14.33. Senior Leader Maintenance Course	Y	Y	Y	Y	Y
14.34. Special Certification Roster (SCR)	Y	Y	Y	Y	Y
14.35. WRM External Nestable Fuel Tank Build-Up (NFTBU)	Y	N	N	N	N
14.36. 406 MHZ Emergency Locator Transmitter System	Y	N	N	N	N
14.37. IFF Mode IV Program	Y	N	N	N	N

Items designated with “Yes” are applicable only in those units that perform that function. If a unit gains a function that involves the above listed items, they will be required to follow the applicable guidance within Chapter 14.
* 14.1.1.3
** Will develop local guidance that meets the intent of applicable paragraph.
14.38.9.6. (Added) MOC initiates follow-up action when the oil analysis record is not returned to the OAP lab.
14.38.9.7. (Added) OAP Lab will attempt to retrieve analysis results from support labs if cross-country paperwork is not returned or cannot be found. If results cannot be obtained from supporting bases, engine shall be placed on surveillance to establish a new trend.
14.38.9.8. (Added) OAP lab reviews returned oil analysis records for adverse trends and takes necessary action.
14.38.9.9. (Added) Flying squadrons will continue to follow the maintenance practices of this instruction and local policy at the deployment site.
14.38.9.10. (Added) Deployed OAP personnel will have either telephone or radio communication with MOC and the flying squadrons to expedite reporting of abnormal OAP trends.
14.38.10. (Added) The following are OAP requirements for transient aircraft (TA).
14.38.10.1. (Added) TA personnel sample aircraft as required by this section and applicable -6 TO.
14.38.10.2. (Added) TA personnel draw/perform the OAP sample and make a Red Dash entry on the AFTO Form 781A stating "Engine oil analysis results due".
14.38.10.3. (Added) When OAP capability exists at a transient location and an OAP sample is required, the OAP sample results will be known prior to aircraft departure unless otherwise authorized by the MXG/CC/CL/CD or equivalent at the transient location.

14.38.10.3.1. (Added) If OAP sample results are not provided before aircraft departure, the results will be forwarded via FAX/other electronic means by the local MOC or TA to the aircrew's next destination (either MOC, TA, or base operations).
14.38.10.4. (Added) Transient bases without OAP capability will take required OAP samples. The OAP samples will be analyzed at the next base along with the next OAP sample.
14.39. (Added) Additional Maintenance Requirements are applicable to NSO per Figure 14.3. (Added) , Applicability Matrix. NSOs will use matrix below to determine applicability. If the program is applicable per the matrix, the NSO will follow guidelines under the CWO section of AFI 21-101 and any NSO specific additions in this supplement.
14.39.1. (Added) 46 TG will use matrix under Table 14.4. (Added).
DEV Table 14.4. (Added) 46 TG Applicability Matrix

Non-Standard Organization Section	46 TG QA	586FL TS	46 TG Det 2	746 TS GUI D	846 TS TR AC K	746 TSS LMC A	AVS F	LG TF
14.1. Aircraft Battle Damage Repair	NO	NO*1	NO	NO	NO	NO	NO	NO
14.2. Aircraft De-Contamination	NO	NO*1	NO	NO	NO	NO	NO	NO
14.3. Aircraft Grounding	YES	NO	NO	NO	NO	NO	NO	NO
14.4. Aircraft Inlet/Exhaust Certification	NO	NO	NO	NO	NO	NO	NO	NO
14.5. Aircraft Rapid/Hot Defueling	NO	NO	NO	NO	NO	NO	NO	NO
14.6. Aircraft Structural Integrity (ASIP)	NO	NO	NO	NO	NO	NO	NO	NO
14.8. Cannibalization Program	NO	NO	NO	NO	NO	NO	NO	NO
14.9. Combat Sortie Generation	NO	NO	NO	NO	NO	NO	NO	NO
14.10. Crashed, Damaged or Disabled Aircraft Repair	NO	NO*2	NO	NO	NO	NO	NO	NO
14.11. Dropped Object Prevention	YES	YES	NO	NO	NO	NO	NO	NO
14.12. F100 Eddy Current Inspection	NO	NO	NO	NO	NO	NO	NO	NO
14.13. End-of-Runway (EOR) Inspection	NO	NO	NO	NO	NO	NO	NO	NO
14.14. Engine Blade Blending Training and Cert Prgm	NO	NO	NO	NO	NO	NO	NO	NO
14.15. Engine Run Training and Certification Program	NO	NO	NO	NO	NO	NO	NO	NO
14.16. Flash Blindness Protective Device	NO	NO	NO	NO	NO	NO	NO	NO
14.17. Engine Flex Borescope Inspection Training/Cert	NO	NO	NO	NO	NO	NO	NO	NO
14.18. Flying Crew Crew Chiefs (FCC)	NO	NO	NO	NO	NO	NO	NO	NO
14.19. Foreign Object Damaged (FOD)	YES	YES	NO	YES	YES	NO	YES	YES

Prevention								
14.20. Forms Documentation	YES	YES	NO	YES	YES	NO	NO	NO
14.21. Ground Instructional Trainer Aircraft (GITA)	NO	NO	NO	NO	NO	NO	NO	NO
14.22. Hangar Queen Aircraft	NO	NO	NO	NO	NO	NO	NO	NO
14.23. Hot Refueling Procedures	NO	NO	NO	NO	NO	NO	NO	NO
14.24. Land Mobile Radio Management	YES *2	YES* 2	YES *2	YES *2	YES *2	NO	NO	NO
14.25. Lead Technician	NO	NO	NO	NO	NO	NO	NO	NO
14.26. Maintenance Recovery Team (MRT) Procedures	NO	NO	NO	NO	NO	NO	NO	NO
14.27. Protective Aircraft Shelter (PAS) Environment	NO	NO	NO	NO	NO	NO	NO	NO
14.28. Radar Warning Receiver/Radar Threat Warning Test	NO	NO	NO	NO	NO	NO	NO	NO
14.29. Ramp Inspection Program	NO	NO	NO	NO	NO	NO	NO	NO
14.30. Red Ball Maintenance	NO	NO	NO	NO	NO	NO	NO	NO
14.31. (SEM/EDX) Master Chip Detector Analysis Program	NO	NO	NO	NO	NO	NO	NO	NO
14.32. Self-Inspection Program	YES	YES	YES	YES	YES	YES	YES	YES
14.33. Senior Leader Maintenance Course	YES	NO	NO	NO	NO	NO	NO	NO
14.34. Special Certification Roster (SCR)	YES	YES	NO	YES	YES	NO	NO	NO
14.35. WRM External Nestable Fuel Tank Build-Up (NFTBU)	NO	NO	NO	NO	NO	NO	NO	NO
14.36. 406 MHZ Emergency Locator Transmitter System	NO	NO	NO	NO	NO	NO	NO	NO
14.37. IFF Mode IV Program	NO	NO	NO	NO	NO	NO	NO	NO
Items designated with "Yes" are applicable only in those units that perform that function								
*1 N/A CLS								
*2 49 FW (HTSA)								

Chapter 15 - MAINTAINING COMMERCIAL DERIVATIVE AIRCRAFT
This section intentionally left blank. No supplemental data necessary.
Chapter 16 - AIRCREW EGRESS SYSTEMS MAINTENANCE
This section intentionally left blank. No supplemental data necessary.
Chapter 17 - CENTRALIZED REPAIR FACILITIES (CRFS)
This section intentionally left blank. No supplemental data necessary.

Chapter 18 - CONTRACT SURVEILLANCE

18. (Added) Introduction. The objective of logistics program management is to integrate the performance-based operation into the supported AF mission, monitor the life-cycle management of government property, and execute the business end of the AF programs. This chapter applies to AF units performing duties across the full spectrum of logistics. This includes conventional force logistics units; nuclear and nuclear support units; space; special operations; wholesale-level procurement, sustainment, and maintenance; logistics support to research, test, and development units; and logistics support to special access programs. This chapter establishes guidelines for performance management and surveillance of performance-based activities performing make and repair activities which include all organizations within the wholesale and base-level logistics enterprise that conduct activities related to the manufacture and repair of assets to support weapon systems. This encompasses organizations that perform generation, launch, recovery, ground handling, and servicing of aircraft. It includes organizations that perform manufacturing, maintenance (organizational/ intermediate/depot to include on-equipment maintenance/repair and off-equipment maintenance/repair functions) repair, calibration, overhaul, or inspection of: aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities. This chapter shall be used in concert with AFI 63-101 and other applicable guidance, FAR, etc, (or the instruction in existence at the time of contract award). This includes contracts totaling \$250K or more.

18.1. Government Contract Quality Assurance. COR is used to describe all government personnel appointed to surveil service contracts.

18.1.1. AFMC units to include Maintenance wings (ALCs), maintenance groups (test wings and AEDC) and air base wings which have performance-based maintenance or maintenance support activities shall establish a single, centralized program management office (PMO) also know as Contract Management Office (CMO). For installations which have performance-based maintenance and maintenance support activities shared between two or more wings, the wing which established the contract will be responsible for overseeing and managing the contractor's performance. The PMO will consist of a full time, dedicated staff to initiate, oversee and manage performance-based activities within the maintenance wing/group. The PMO will consist of a program manager, COR chief(s) and COR(s). The Chief COR may serve as both the program manager and Chief COR when the workload does not justify both positions. Additionally ACO/PCOs who administer the performance-based maintenance contracts will be assigned or matrixed to the PMO to ensure a comprehensive team focused on administration and management of the contracted operations. The office may include subject matter experts from various functional areas (e.g., CE, communications, contracting, finance, plans, and logistics). All contracts will be coordinated with the PMO to ensure consistency and standardization of PWSs and to minimize the number of contracts for similar operations.

18.1.1.1. **(Added)** The PMO will:

18.1.1.1.1. **(Added)** Develop guidance for and coordinate on all PPs.

18.1.1.1.2. (Added) Ensure adequacy of training program for CORs and track training to ensure currency for FC/FDs, Chief CORs and CORs.
18.1.1.1.3. (Added) Coordinate on all service contracts to ensure contractor operations at least meet AF standards and to minimize disruptions to mission.
18.1.1.1.4. (Added) Ensure adequacy of PWS/SOW by utilization of the S.M.A.R.T. concept. This concept, when utilized, will ensure the PWS/SOW captures specific, measurable, attainable, realistic, and timely (SMART) goals for the contractor and their quality assurance plan.
18.1.1.1.5. (Added) Avoid multiple contracts for the same or similar operations.
18.1.1.1.6. (Added) Ensure AF maintenance standards are included in the PWS where practicable. These standards include but are not limited to: tool control, FOD prevention, safety (where government resources are exposed to risk by contracted operations), <i>tool and</i> equipment management, and materiel control.
18.1.1.1.7. (Added) Ensure AF maintenance data collection and information management systems such as IMIS, FEMS, AMCS, IMDS, CEMS, G081, SBSS, and AFEMS are mandated in the PWS where practicable.
18.1.1.1.8. (Added) Conduct a quarterly review of activities with COR chief(s), CORs and ACO/PCOs.
18.1.1.1.9. (Added) Develop local procedures to ensure standardized PMAP and documentation.
18.1.1.1.10. (Added) Keep up-to-date on mission changes that could affect creation of a contract modification and advise the FC/FD.
18.1.1.1.11. (Added) Oversee the development of a PMAP that effectively measures and evaluates contractor, MEO, or HPO performance throughout the life of the contract or management plan.
18.1.1.1.12. (Added) Ensure PMAP implements the requirements of applicable guidance and this chapter.
18.1.1.1.13. (Added) Review problem areas with the PCO/ACO to resolve the problems. If the problem cannot be resolved, advise the FC/FD and request assistance through command channels.
18.1.1.1.14. (Added) Review documents related to default/re-compete prior to scheduled recompetition; contract Section C , PWS/SOW, requirements document or scope of work modifications; changes to award fee plan (if applicable); contractor, MEO, or HPO proposals to

new or revised DoD, AF, MAJCOM, and local directives.
18.1.1.1.14.1. (Added) Related documents include:
18.1.1.1.14.1.1. (Added) Intent or consideration to default or re-compete the contract prior to the scheduled recompetition.
18.1.1.1.14.1.2. (Added) Modifications to the contract involving changes to the statement of work, PWS, or scope of work requirements. Ensure cost estimates are included.
18.1.1.1.14.1.3. (Added) Changes to the award fee plan.
18.1.1.1.14.1.4. (Added) Locally procured maintenance/service contracts.
18.1.1.1.14.1.5. (Added) PWS/Statements of work (SOW) for all aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities maintenance/service contracts (includes transient alert contracts) covered in Added paragraph 18.
18.1.1.1.14.1.6. (Added) Contractor proposals to new or revised DOD, Air Force, MAJCOM, and local directives.
18.1.1.1.15. (Added) Coordinate waiver requests with the MAJCOM/A4 staff when initiated by the contractor, MEO, or HPO.
18.1.1.1.16. (Added) Ensure performance-based contract assessment tools (e.g. process and systems audits, compliance checklists, random sampling or other frequency-based inspection methods, etc.) are used to maximum extent possible monitor contractor, MEO, or HPO submission of required reports according to the contract Section C, PWS/SOW, requirements document, management plan, AFI, or MAJCOM publication.
18.1.1.1.17. (Added) Ensure surveillance methods to monitor contractor, MEO, or HPO performance IAW federal, state, and local environmental laws and AF directives.
18.1.1.1.18. (Added) Ensure contracts contain a viable contingency plan for tasks identified as essential DFARS Subpart 237.76, <i>Continuation of Essential DoD Contractor Services During Crisis</i> , and annually coordinate with PMO and PCO/ACO to revise, update, or change it.
18.1.1.1.19. (Added) Establish procedures for technical evaluation of contractor-submitted value engineering change proposals (if applicable).
18.1.1.1.20. (Added) Submit surveillance schedules IAW guidance of PMAP or performance plan to FC/FD for approval, as required.
18.1.1.1.21. (Added) Review publications for acceptance (when contractor generated) (e.g.,

wing-level instructions and group OIs) developed by the performance-based activity (contractor, MEO, or HPO) prior to final signature and implementation.
18.1.1.1.22. (Added) Establish a standard format for the monthly surveillance summary report.
18.1.1.1.23. (Added) Will provide Government vehicles for centrally located CORs. CORs must have transportation to and from the contractor's location in order to provide timely support.
18.2.1. (Added) Facilities. When performance-based activity (contractor, MEO, and HPO) performance is required on base, then facilities are government owned and contractor operated (GOCO). When performance is required off base, then facilities are contractor owned and contractor operated (COCO).
18.3.2. (Added) Financial Management. The PMO shall annually (usually in March) ensure that the MAJCOM/FM Budget Office includes contract funding requirements in the FYDP. The PMO shall identify MEO and HPO personnel requirements for inclusion in the FYDP. Also, the PMO shall establish procedures to collect reimbursements when a performance-based activity (contractor, MEO, or HPO) provides support as a support agreement supplier (host).
18.3.3. (Added) Support Agreement Management. See AFI 25-201. Performance-based activities (contractor, MEO, and HPO) cannot negotiate and sign support agreements. The PMO shall negotiate, coordinate and control support agreements for supported workloads. MEOs and HPOs are authorized to negotiate, coordinate, and control support agreements pertinent to their functional area, but shall not without written approval of the government program management office.
18.3.4. (Added) Change Management for Performance-Based Activities (contract, MEO, and HPO). See FAR for contracts. The PMO is the OCR for issuing and identifying the need for contract modifications. The government program management office is the OPR for changing MEO and HPO management plans.
18.5.2.1. (Added) The PP implements the requirements of applicable guidance and this chapter.
18.5.4.1. (Added) Related documents include:
18.5.4.1.1. (Added) Intent or consideration to default or re-compete the contract prior to the scheduled recompetition.
18.5.4.1.2. (Added) Modifications to the contract involving changes to the statement of work or scope of work requirements. Ensure cost estimates are included.
18.5.4.1.3. (Added) Changes to the award fee plan.
18.5.4.1.4. (Added) Locally procured maintenance service contracts.

18.5.4.1.5. (Added) PWS/Statements of work (SOW) for all aircraft, aerospace equipment, aircraft engines, support equipment/tools, conventional munitions, nuclear munitions, missiles, vehicles, components, and other non-flying weapon systems and related activities maintenance/service contracts (includes transient alert contracts) covered in Added paragraph 18.
18.5.4.1.6. (Added) Contractor proposals to new or revised DOD, Air Force, MAJCOM, and local directives.
18.5.5. Coordinate waiver requests with the HQ AFMC/A4 staff through the appropriate chain of command when initiated by the contractor, MEO, or HPO.
18.5.7. Comply with all requirements.
18.5.11. PMO will determine procedures to nominate CORs for CLS/CFT contracts and all service contracts over SAT. Chief COR has the authority to reject nominations (not technically qualified).
18.5.15. Include performance status of contract activities in maintenance management meetings.
18.5.16. (Added) Ensure the appropriate functional reviews (i.e. Safety, Bioenvironmental, etc.) have been performed on the PWS/SOW prior to submission of the requirements package to contracting.
18.5.17. (Added) Pre-Contract Award and Pre-Planning for Management Plan Requirements. The requirements of this paragraph are applicable solely to the functional commander/functional director (FC/FD). These requirements shall be considered for incorporation into all solicitations, initial and follow-on (e.g., recompetitions), and MEO/HPO management plans containing maintenance functions. The guidance in this paragraph is authoritative, but not directive except where noted as mandatory because of Public Law, executive orders, DOD directives, or AFIs. Existing contracts need not change until recompetition of the function.
18.5.18. (Added) Contract /MEO/HPO Documentation.
18.5.18.1. (Added) Contract Format. The procuring contracting officer (PCO) is the OPR for contract preparation. The Uniform Contract format has 13 sections, alphabetized from A to M. The maintainer's primary concern will be with Section C, <i>Description/PWS/Specification/Statement of Work</i> , because this section details the service (outputs) the offeror is required to perform and the go/no-go checklist (services summary (SS)) for accepting the service (outputs). The FC/FD is the OPR for Section C and the SS.
18.5.18.2. (Added) MEO Format. See AFI 38-203.
18.5.18.3. (Added) HPO Format. Use same format as the MEO management plan, see AFI 38-203.

18.5.18.4. (Added) Solicitation, MEO, and HPO Provisions.
18.5.18.4.1. (Added) Applicability of AFIs and TOs. The Section C, PWS/SOW, requirements document and HPO management plan shall include AFI and TO requirements. TOs are mandatory and will be cited in their entirety. Cite mandatory AFI paragraph(s) or cut and paste text from the AFI into the Section C, PWS/SOW requirements document and HPO management plan. Contact MAJCOM/A4 staff and HQ USAF/A4LM, in turn, for assistance when there is disagreement over applicability and use of TOs or 21-Series AFIs.
18.5.18.4.2. (Added) Contractors performing operations covered by this instruction on or using government resources shall meet the intent of applicable portions of AFI 21-101. As a minimum the following programs will be addressed in the PWS/SOW: tool control, documentation, FOD prevention, and materiel control and equipment management. It is important to consider the full scope of contracted operations as this attachment may not identify all necessary standards to be considered or may contain standards that are not part of the contracted operations.
18.5.18.4.3. (Added) Contract Data Requirements. The Section C, PWS/SOW requirements document and HPO management plan shall not require data deliverables except when required IAW an AFI or TO. Data deliverables created as a natural consequence of complying with AFIs or TOs shall not be cited in a contract data requirements list (CDRL) or contract line item number. For example, report data collected IAW an AFI or TO and documented on the appropriate AF Form/IMT or equivalent.
18.5.18.4.4. (Added) Support Agreements. The Section C technical exhibits and HPO management plan shall include workload requirements supported via support agreement (see AFI 25-201).
18.5.18.4.5. (Added) Organization. Contractors and MEOs are exempt IAW AFI 38-203 from organizing their operations as defined in AFI 38-101; however, the Section C PWS/SOW requirements document shall include a requirement mandating use of the AF standardized mailing address format (e.g., 412 CMS/MXMD) to facilitate uniform communication between organic and non-organic activities. HPOs opting not to comply with AFI 38-101 shall submit a waiver request through their MXG/CC, WG/CC, and MAJCOM/A1M/to HQ USAF/A1M.
18.5.18.5. (Added) Review documents related to default/re-compete prior to scheduled recompetition; contract Section C , PWS/SOW, requirements document or scope of work modifications; changes to award fee plan (if applicable); contractor, MEO, or HPO proposals to new or revised DoD, AF, MAJCOM, and local directives.
18.6.1.3. There will be Primary and Alternate COR for each contract.
18.6.1.4. PMO will determine fill requirements.
18.6.1.5. Chief COR has the authority to reject nomination but must notify FC/FD in writing the rejection justification and maintain on file.

18.6.1.7. Chief COR ensures the development of schedule. Copies of all schedules may be kept on file electronically in a data base.
18.6.1.10.1. (Added) Ensure development and maintain the PP and associated contract performance assessment documentation IAW ACO/PCO guidelines.
18.6.1.15.1. (Added) In coordination with the QAPC, develop a COR Training Program (Sign in Rosters for the training is maintained by the Chief COR) along with master training plan for CORs and individual training records with AF Form 797 to document technical training, evaluator training, and ancillary required training.
18.6.1.18. (Added) Serve on the Multi-Functional Team (MFT) to ensure Section C PWS/SOW requirements documents and Performance Plan are properly developed utilizing the SMART Concept.
18.7.1.8. Report findings to PMO for coordination, through CO prior to forwarding to MAJCOM. (When applicable)
18.7.1.10.1. (Added) Serve as a member of the multi-function team when required.
18.7.1.11.1. (Added) COR will deliver schedule to Chief COR for distribution.
18.8.1.1. The program manager, Chief COR, COR will complete the AFMC developed COR training requirements. This training will be developed at a later date, and in the interim, the AETC Quality Assurance Evaluator Course may be attended on a space available basis.
18.8.2. CORs and Chief CORs must complete training IAW AFFARS MP 5301.602-2(d). HQ AFMC/A4US will develop a standard MAJCOM general COR training course at a later date. In the interim training IAW AFFARS MP 5301.602-2(d) will continue to be provided by the local QAPC. Additionally, it is highly recommended that CORs and Chief CORs complete the AETC Quality Assurance Evaluator Course. Completion of this course fulfills training requirement. COR Chiefs are also highly encouraged to complete the AETC Chief COR and Superintendent Course (until AFMC courses become available at a later date yet to be determined). Once AFMC Chief COR and FC/FD courses are developed and taught, these courses will become mandatory.
18.8.3. CORs, Chief CORs and FC/FDs must complete training IAW AFFARS MP 5301.602-2(d).
18.8.4.1. HQ AFMC/A4US will facilitate development of a standard MAJCOM initial and refresher general COR training courses at a later date.
18.8.9.1. (Added) HQ AFMC/A4US will facilitate development of a standard MAJCOM general COR training course at a later date. Completion of the AETC Functional Commander Executive Training Session is highly recommended for FC/FDs.

18.11.3. Observation Area inspections will be accomplished at least annually and listed on the monthly schedule. Requirements will be coordinated/determined by the PMO.
18.14.1. (Added) MAJCOM will determine content, format and routing.
18.15. Contractor non-conformance. If not specified in the contract, corrective action request (CAR) reporting forms will be determined by the PMO.
18.19.1. (Added) Also follow FAR Part 37.with regards to Transition Plans.